NOTICE.

Counter Bills, with name printed on (same as copy underneath), and handsome **Show Cards** of our

EFFERVESCING TRUE CITRATE OF MAGNESIA,
And DOUBLE-STRENGTH FLUID MAGNESIA,

Will be sent **free** to the Trade on receipt of business card.

THE ONLY TRUE CITRATE OF MAGNESIA.

EXTRACTS
FROM THE
MEDICAL PRESS.

FROM THE
British Medical Journal.

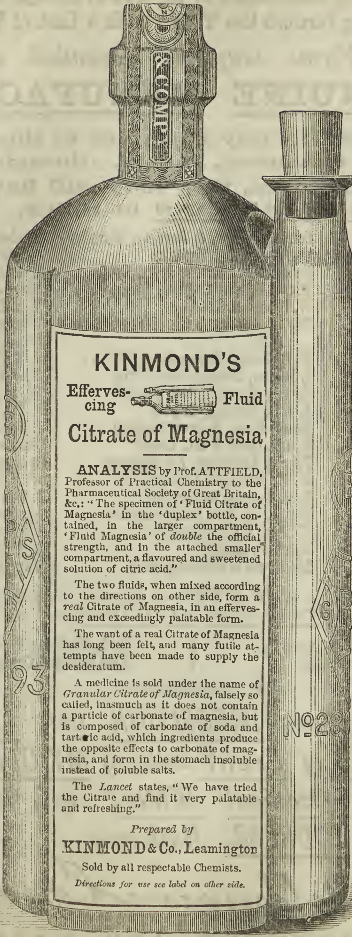
"It is very well known that what is commonly sold as granular effervescing citrate of magnesia is in truth not a citrate of magnesia at all, but a tartrate of soda. It is a good idea which Messrs. Kinmond & Co., of Leamington, have had in issuing in a duplex bottle a fluid magnesia of double the officinal strength, and (in the attached smaller compartment) a solution of sweetened citric acid. Half a teaspoonful of the citric solution added to a tablespoonful of the magnesia solution gives a true effervescent solution of citrate of magnesia."

FROM THE
Medico Review.

"Kinmond's Effervescing Fluid Citrate of Magnesia and Double-Strength Fluid Magnesia are indeed beautiful preparations, brisk and agreeable to the taste, free from deposit, and very superior to any other specimens we have seen. May their double strength render them a double blessing to mankind."

FROM
Jabez Hogg, Esq., M.R.C.S.
Surgeon to the Royal Westminster Ophthalmic Hospital, President of the Medical Microscopical Society, &c., &c.

"I find your Effervescing Citrate of Magnesia to be an exceedingly agreeable, cooling drink in the smaller doses, and its efficacy as a saline aperient is far more efficient and certain than any of the preparations sold under the name of Citrate of Magnesia that I have ever used."



KINMOND'S
Effervescing Fluid
Citrate of Magnesia

ANALYSIS by Prof. ATTFIELD, Professor of Practical Chemistry to the Pharmaceutical Society of Great Britain, &c.: "The specimen of 'Fluid Citrate of Magnesia' in the 'duplex' bottle, contained, in the larger compartment, 'Fluid Magnesia' of *double* the official strength, and in the attached smaller compartment, a flavoured and sweetened solution of citric acid."

The two fluids, when mixed according to the directions on other side, form a *real* Citrate of Magnesia, in an effervescing and exceedingly palatable form.

The want of a real Citrate of Magnesia has long been felt, and many futile attempts have been made to supply the desideratum.

A medicine is sold under the name of *Granular Citrate of Magnesia*, falsely so called, inasmuch as it does not contain a particle of carbonate of magnesia, but is composed of carbonate of soda and tartaric acid, which ingredients produce the opposite effects to carbonate of magnesia, and form in the stomach insoluble instead of soluble salts.

The *Lancet* states, "We have tried the Citrate and find it very palatable and refreshing."

Prepared by
KINMOND & Co., Leamington
Sold by all respectable Chemists.
Directions for use see label on other side.

DUPLEX BOTTLE, REGISTERED, 2/ EACH.

FLUID MAGNESIA that is EFFICACIOUS! Ask for **KINMOND'S DOUBLE-STRENGTH FLUID MAGNESIA**, containing just double the quantity of any in use, and therefore more certain in its action, and can be taken with more benefit for Acidity, Heartburn, Headache, Indigestion, Gout, &c. For a dose take half the quantity which is required of any other maker's,—Of all Chemists, in bottles, 1*s.* and 2*s.* 6*d.* each.

In Bottles, 1s., 2s., and 2s. 6d. each; and supplied to the Trade at 8s., 17s., and 19s. per dozen.

WHOLESALE AGENTS IN LONDON.

BARCLAY & SON, 95 Farringdon St., E.C.
W. EDWARDS, 38 Old Change, E.C.
LYNCH & Co., 171A Aldersgate St., E.C.
W. MATHER, 14 Bath Street, Newgate Street, E.C.
TIDMAN & SON, Wilson Street, Finsbury.
NEWBERY & SON, 37 Newgate Street, E.C.
SANGER & SON, 252 Oxford St., W.; and
WRIGHT, SELLERS & LAYMAN, 50 Southwark Street, S.E.
R. H. MILLARD & SONS, 44 Barbican, E.C.

WHOLESALE AGENTS IN COUNTRY.

GOODALL, BACKHOUSE & CO., Leeds.
SOUTALL BROTHERS, Birmingham.
WYLEYS & CO., Coventry.
NORTHAM & CO., Bristol.
JEYES & CO., Bristol.
E. E. JOHNSON, Manchester.
WM. PILLING, Salford, Manchester.
TOMLINSON, NICHOLSON & MORRIS, Salford, Manchester.
BARROW EVANS, Derby.
CLARK, NETTLESHIP & CO., Leicester.
DUNCAN, FLOCKHART & CO., Edinburgh.
SANG & BARKER, Edinburgh.
HATRICK & CO., Glasgow.
HARVEY, REYNOLDS & CO., Leeds.
JOHN ISMAY, Newcastle-on-Tyne.
RAIMES & CO., York.
T. STOCKER & CO., St. Ives (Hunts).
TOMLINSON & CROWDER, Barton-on-Humber.

KINMOND & CO., LEAMINGTON.

Condy's Fluid

Finding that the Sale of Imitations of my Fluid, though diminishing, has not quite ceased, I beg to furnish the Trade with a List of Wholesale Agents.

The following Firms may be depended upon to supply

MY GENUINE MANUFACTURES.

The goods supplied by any Firm not in this List should be CAREFULLY examined, since, though they usually supply my manufactures, they may still have a little of the IMITATIONS in Stock.

Apothecaries' Hall, London
Barclay & Sons, London
Jno. Bell & Co., London
Jno. Sanger & Sons, London
F. Newbery & Sons, London
S. Maw, Son & Thompson, London
Jno. Thompson, London
R. H. Millard & Sons, London
Barron, Squire & Co., London
Baiss Bros., London
Burgoyne, Burbidges & Co., London
Davy, Yates & Routledge, London
T. Morson & Son, London
Tidman & Son, London
Savory & Moore, London
Corbyn & Co., London
Clay, Dod & Case, Liverpool
Raimes & Co., Liverpool
Jewsbury & Brown, Manchester
T. W. Holdsworth, Birmingham

Southall Bros. & Barclay, Birmingham
Smith & Sons, Norwich
Goodall, Backhouse & Co., Leeds
Hirst, Brooke & Hirst, Leeds
W. Smeeton, Leeds
Taylor, Gibson & Co., Newcastle-on-Tyne
H. B. Brady, Newcastle-on-Tyne
J. Ismay, Newcastle-on-Tyne
Ferris, Bourne & Co., Bristol
A. & J. Warren, Bristol
Reade Bros., Wolverhampton
Evans, Gadd & Co., Exeter
Parr & Atherton, Nottingham
W. B. Harrison, Sunderland
D. B. Sharpe, Sunderland
Randall & Son, Southampton
Wyleys & Co., Coventry
Kernick, Cardiff
Lofthouse & Saltmer, Hull

Argles, Son & Stonham, Maidstone
Raimes & Co., York
Raimes, Blanchards & Co., Edinburgh
Sang & Barker, Edinburgh
T. & H. Smith, Edinburgh
Clarke & Pinkerton, Edinburgh
Duncan, Flockhart & Co., Edinburgh
J. Mackay, Edinburgh
New Apothecaries' Co., Glasgow
W. & R. Hatrick & Co.. Glasgow
J. Taylor, Glasgow
J. Taylor, Glasgow
Clarke & McMullan, Belfast
Grattan & Co., Belfast
W. Paterson & Sons, Aberdeen
J. Sim & Co., Aberdeen
Apothecaries' Hall, Dublin
Boileau & Boyd, Dublin
McMaster, Hodgson & Co., Dublin
Harrington & Son, Cork

The following comprises a List of Wholesale Houses confessing that they supply OTHER THAN MY ARTICLES:—

W. Edwards, Old Change, E.C.
Butler & Crispe, London

Nash, Hackney Road
Apothecaries' Company, Glasgow

◆

To guard against IMPOSITION and LEGAL LIABILITY Notice *that the label of EVERY bottle of MY GENUINE "Condy's Fluid," "Condy's Ozonised Water," &c., has my facsimile signature and the ADDRESS, Battersea.*

H. Bollmann Condy

(INVENTOR, PATENTEE AND MANUFACTURER),

BATTERSEA, S.W.

Index to Advertisements.

August 14, 1875.

(A)

ASSISTANTS WANTING SITUATIONS ... 25, 26
AUTOMATIC BOTTLE FILLER ... 66

(B)

BAGLEY & CO. ... *Bottle Manufacturers* ... 59
BAILY & SON ... *Roup and Condition Pills* ... 38
BANNER & CO., E. R. ... *Female Pills—Trade Notice* ... 61
BARBER, T. ... *Vermin Killer, &c.* ... 66
BARNETT, SON & FOSTER ... *Soda Water Machinery, &c.* ... 66
BARRETT & ELERS ... *Patent Stopper Aërated Water Bottles, &c.* 64
BARRON, SQUIRE & CO. ... *Wholesale and Export Druggists.* 54
BATTLEY & WATTS ... *Wholesale Druggists* ... 54
BEAL & SON ... *Specialities* ... 58
BEDDARD, J. ... *Spring and Autumn Saline* ... 66
BERDOE & CO. ... *French Essences* ... 32
BEST & SONS, W. ... *Natural Mineral Waters* ... 64
BEWLEY & DRAPER ... *Dichroic Ink* ... 44
BINGLEY, J. ... *Aërated Waters* ... 67
BISHOP, A. ... *Citrate of Magnesia* ... 41
BLACKWELL & CO. ... *Eureka Polishing Powder* ... 31
BOLLANS, E., & CO. ... *Perfumery Christmas Cards, &c.* 33
BOND'S DAUGHTER ... *Marking Ink* ... 6
BOOR & CO., G. ... *New Chemical Warehouse* ... 52
BRADLEY & BOURDAS ... *Plate Powder* ... 31
BRAITHWAITE, J. C. ... *Teacher of Chemistry* ... 10
BRISTOL MEDICAL SCHOOL (Winter Session) ... 12
BRISTOW & CO., T. F. ... *Perfumery* ... 32
BROU, M. ... *Injection* ... 46
BROWN, O. P. ... *Herbal Remedies* ... 60
BUCK, F. ... *Dentistry* ... 8
BULLOCK & REYNOLDS ... *Pepsina Porci* ... 56
BURGESS, WILLOWS & FRANCIS *Wholesale Druggists* ... 52
BUSINESSES FOR DISPOSAL ... 24, 25
BUTCHER, W. ... *Homœopathic Medicines* ... 70

(C)

CADBURY BROS. ... *Cocoa Essence* ... 78
CALVERT & CO. ... *Circular Note on Crude Carbolic Acids* ... 45
CARTER, J. ... *Window Letter Advertising* ... 27
CASSELL, PETTER & GALPIN .. *Almanacks, 1876* ... 15
CAUVET & CO. ... *Capsules, P. Lauranson, Agent* .. 48
CENTRETON, J. ... *Seamless White Teats* ... 32
CHILD, W. H. ... *Brushes* ... 73
CHUBB, J. C. ... *Seidlitz Powders, &c.* ... 26
CLARKE, F. J. ... *Blood Mixture* ... 4
CONDRON, R. ... *Panstrepton Brush* ... 30
CONDY, H. B. ... *Condy's Fluid* ... 20
CONDY'S-FLUID COMPANY ... 7
CONTINENTAL & COLONIAL TRADERS *Transylvanian Honey* 57
COOPER & CO. ... *Sinapine Tissue* ... 72
CRAWSHAW, E. ... *Aniline Dyes* ... 35
CUFF, J. H. ... *Mineral Waters* ... 65
CUPISS, F. ... *Constitution Balls* ... 36

(D)

DARLING, W. ... *Dentifrice* ... 31
DAVENPORT, J. T. ... *Chlorodyne* ... 53
DENTAL MANUFACTURING CO., THE .. *Safety Thermometers* .. 14
DINNEFORD & CO. ... *Solution of Magnesia* ... 72
DOBELL, DR. ... *Works on the Heart and Lungs* .. 10
DUNCAN BROS. ... *Lubricating Oils* ... 42
DUNN & CO. ... *Manufacturing Chemists—Notice of Removal* ... 50

(E)

ELLIS & CO. ... *Corks* ... 59
ELLIS & SON ... *Aërated Waters* ... 67
EMPLOYERS WANTING ASSISTANTS ... 25
EPPS, J., & CO. ... *Homœopathic Medicines* ... 76
EPPS, J., & CO. ... *Homœopathic Domestic Physician* 14
EPPS & CO., FRANKLIN ... *Homœopathic Chemists* ... 16
EVANS, SONS & CO. ... *Wholesale and Export Druggists.* 52
EWEN, J. ... *Clarified Lard, &c.* ... 35

(F)

FARDON & SON ... *Indian Tincture for Rheumatism* 50
FAULDING & CO ... *Wholesale Druggists* ... 46
FELTOE & SONS ... *Spécialité Sherry* ... 78
FENNING ... *Children's Powders* ... 78
FITCH & NOTTINGHAM ... *Leeches* ... 72
FOSTER, M. E. ... *American Bay Rum* ... 26
FOULGER & SON ... *Lavender Water* ... 31
FRANCIS, J. ... *Printing Presses* ... 60
FRIQUET, L. ... *Briet's Gazogene* ... 63
FRY & SONS ... *Extract of Cocoa, &c.* ... 68
FULLER & CO. ... *Phosphodynized Cod Liver Oil, &c.* .. 56
FURNIVAL, J. D. ... *Brown's Prince Albert Sauce* ... 68

(G)

GERAUT & CO. ... *Seltzogenes, &c.* ... 63
GERRARD ... *Charta Sinapis, or Mustard Plaster* 75
GIBBS, D. & W. ... *Soaps* ... 34
GIBSON ... *Chlorodyne Lozenges, &c.* ... 58
GILLOTT, J. ... *Pens* ... 32
GODDARD, J. ... *Plate Powder* ... 72
GOODALL, BACKHOUSE & CO. .. *Yorkshire Relish, Quinine Wine, &c.* 44
GOODALL, BACKHOUSE & CO. .. *Baking Powder* ... 71
GOOSEY & ROGERS ... *Plasters, &c.* ... 52
GOULD & CO. ... *Indian Bael* ... 58
GOULD & SON, E. ... *Homœopathy* ... 57
GOUNDRY & CO. ... *Consolidated Tea* ... 71
GRAINS OF HEALTH ... 56

(H)

HAIGH, D. ... *Dutch Drops* ... 50
HAMPSON, R. ... *Sugar-Coated Pills* ... 50
HANCOCK, F. & C. ... *Patent Mixing Machine* ... 60
HARPER TWELVETREES & SON *Ball Blue, Glycerine Soap Powder* 27
HART, J., & SON ... *Sponges* ... 30
HAWKE & SON ... *Shop Fitters, &c.* ... 40
HAYMAN, A. ... *Balsam of Horehound* ... 57
HAYWARD TYLER & CO. ... *Soda Water Machinery* ... 64
HEATHFIELD, W. ... *Liquor Opii Sedativus* ... 56
HEAVEN & CO. ... *Sealing and Bottling Wax* ... 66
HENRI'S PATENT CATTLE FEED CO. ... 36
HENRY, T. & W. ... *Calcined Magnesia* ... 57
HOMŒOPATHIC PUBLISHING CO. *Modern Works* ... 13
HOOPER, W., & CO ... *Aërated Waters* ... 1
HOOPER, W., & CO. ... *Elastic Mattresses or Celled Beds* 23
HOTTOT, B. ... *Pepsine* ... 47
HOWARD HALL & CO. ... *Caution* ... 58
HOWLETT, S. ... *Shop Fitter, &c.* ... 40

(I)

INGRAM & CO. ... *Mineral Waters Price List, &c.* .. 78
IZOD, J. ... *Meerschaum and other Pipes* ... 66

(J)

JACKSON, M. ... *Scientific Apparatus, Chemicals* .. 8
JAMES, LIEUT. ... *Horse Blistering Ointment* ... 38
JEWSBURY & BROWN ... *Tooth Paste* ... 73
JUDD, H. ... *Teacher of Chemistry* ... 10
JUDSON, D., & SON ... *Gums* ... 27
JUDSON, D., & SON ... *Special Lines* ... 5

Index to Advertisements (continued).—August 14, 1875.

(K)

KEMPTHORNE, PROSSER & CO.	*Colonial Druggists*	47
KIDSTON, F.	*Shop Fitter, &c.*	40
KILNER BROS.	*Notice of Removal*	59
KING'S COLLEGE	*Winter Session*	10
KINMOND & CO.	*"Apneumatic" Mineral Waters*	65
KINMOND & CO.	*Fluid Magnesia & Fluid Citrate of Magnesia—Important Notice*	19
KNEEN & CO.	*Marking Ink*	32

(L)

LACHAPELLE, J. H.	*Soda Water Machinery*	48
LAZENBY, E., & SONS	*Pickles and Sauces*	68
LEATH & ROSS	*Homœopathic Medicines*	3
LECHELLE	*French Specialities*	46
LEGRAND, L.	*French Perfumery*	46
LYNCH & CO.	*Chest Protector*	77
LYNCH & CO.	*Family Enema and Catalogue*	43

(M)

MACKAY & CO.	*Aniline Dyes, &c.*	34
MACLACHLAN & STEWART	*"Scoresby-Jackson's Note Book".*	8
MALDINE, H.	*French Syphons*	46
MASON, A. E.	*Craft Freemasonry, Installation, &c.*	8
MAW, SON & THOMPSON	A 1 *Odorators*	29
MAW, SON & THOMPSON	*Papier Moure, &c.*	37
MAW, SON & THOMPSON	*Sauce Economisers*	69
MAY, ROBERTS & CO.	*Feeding Bottles*	42
MIDDLESEX HOSPITAL (Winter Session)		8
McMASTER, HODGSON & CO.	*Annatto, &c.*	70
MILLS & CO.	*Bourne Waters*	67
MISCELLANEOUS ADVERTISEMENTS		26
MOOR & BALY	*Medical Plasters*	72
MORGAN, ALLSOPP & CO.	*Plate Powder*	31
MORSON & SON, T.	*Specialities*	55
MOTTERSHEAD & CO.	*Salicylic Lozenges*	58
MURRAY & HEATH	*Microscopes, &c.*	14
MYERS & SOLOMON	*General Merchants*	27

(N)

NATALI E.	*Shop Fitter, &c.*	26
NEAVE & CO.	*Infants' Food*	70
NEW VETERINARY COLLEGE, EDINBURGH		10
NORMAN, G.	*Mechanical Dentistry*	32

(O)

ODEN, CARL	*Druggist*	46
OERTLING, L.	*Manufacturer of Chemical Balances*	8
ORDISH & CO.	*Three Useful Specialities*	17
ORRIDGE & CO.	*Chemists' Transfer Agents*	24
OWEN'S COLLEGE (Manchester)	*Winter Session*	14

(P)

PEARCE	*"Anti-Zymotic Cup"*	37
PEARCE & CO.	*Dispensing Bottles*	27
PETERSON & CO.	*Sponge*	30
PICKERING, J. N.	*Soaps*	33
PITT & CO.	*Aërated Waters*	65
PLUMBAGO CRUCIBLE CO.		72
PULVERMACHER, J. L.	*Flexible Batteries*	45

(R)

RANDALL BROS.	*Oils—"Imperial Astral"*	42
RANDALL, SLOPER & CO.	*Aërated Waters*	65
READE BROTHERS	*Insect Killer*	38
RICH, S.	*The Analyst's Annual Note Book*	27
RICHARDSON & CO., J.	*Soluble Pills*	51
RICHARDSON & CO.	*Coated Pills*	56
RIDGE, DR.	*Food for Infants*	71
RIMMEL, E.	*Perfumery*	35
ROBERTS & CO.	*Foreign Chemists*	46
ROBINSON, B.	*Concentrated Waters, Dental Syringe and Trade Notice*	73
ROBINSON & SONS	*Camphor Ball Boxes*	8
ROOKE, DR.	*Rooke's Medicines*	2
ROYAL COLLEGE OF SCIENCE, IRELAND (Winter Session)		12
RUSTON, J.	*Practical Instruction: Aërated Waters*	66
RUTTER	*"Ostruthium"*	27

(S)

SALTER, G.	*Public Apology*	30
SANDELL, T. O.	*Hair Restorer*	26
SANG & BARKER	*Citrate of Magnesia, &c.*	63
SAUQUET, J.	*Bonnet's Pastilles*	47
SAVORY & MOORE		51
SCHACHT, G. F.	*Liquor Bismuthi*	50
SCHMEDES & CO.	*Sarg's Glycerine, &c.*	28
SCHOOL OF PHARMACY, BLOOMSBURY SQUARE		9
SILICATE PAINT CO.		62
SILICATED CARBON FILTER CO		41, 72
SILVERLOCK, H.	*Chemists' Printers, &c.*	75
SMITH & CO.	*Chloroform, &c.*	75
SMITH & CO., J.	*Foreign Mineral Waters*	67
SMITHDALE	*Mustard*	68
SMYTH & CO., A.	*Patent Safe Packing Sample Box*	15
SOUTH LONDON SCHOOL OF PHARMACY	*W. Baxter, Sec.*	11
SOUTHALL BROS. & BARCLAY	*Normandy Honey, Cod Liver Oil, &c.*	44
ST. MARY'S HOSPITAL MEDICAL SCHOOL (Winter Session)		12
ST. THOMAS'S HOSPITAL (Winter Session)		12
STANTON & CO.	*Confectionery*	58
STEDMAN	*Teething Powders*	62
STEINER	*Vermin Paste, &c.*	60
STEVENS, P. A.	*Enamel for Stopping Teeth*	32

(T)

TAYLOR, T. & F. J.	*Aërated Waters*	66
THOMPSON, H. A.	*Concentrated Infusions, &c.*	54
THRESH	*Toilet Requisites*	31
THURSTON, F.	*Horse and Cattle Medicines*	37
TOMLINSON, NICHOLSON & MORRIS	*Shop Fittings, &c.*	39
TOMLINSON, R.	*Druggists' Shop Fitter, &c.*	40
TOMPSON, J. C.	*Vinegar, Important Notice*	74
TOWLE	*Chlorodyne Lozenges, &c.*	57
TRADE DIRECTORY		16, 17, 18
TRIPPIER, T.	*Transfer Agent and Valuer*	24

(W)

WALKER, G.	*Wholesale Druggist*	50
WALTON, J.	*Animal Medicines*	38
WARNER & CO.	*Sugar-Coated Pills*	49
WEST, THOMAS	*Okell's Mona Bouquet*	32
WHEELER, C.	*Soft White Hands*	31
WHELPTON & SON	*Vegetable Pills*	60
WHITAKER & GROSSMITH	*Perfumery*	33
WIGHTMAN, W.	*Printing Presses, &c.*	37
WILCOX & CO.	*Cigars de Joy, for Asthma and Hay Fever*	60
WILKINSON & CO.	*Magic Purifying Drops*	27
WILLIAMS, J.	*Leech Importer*	30
WILLIAMSON, W. H.	*Victoria Sauce, &c.*	68
WILLS, G.	*Teacher of Chemistry*	8
WRIGHT & CO.	*Pilosagine*	31
WYLEYS & CO.	*Wholesale Druggists*	52

(Y)

YARDLEY & CO.	*Perfumery*	35
YOUNG, H.	*Corn and Bunion Plasters*	72
YOUNG & POSTANS	*Granular Effervescing Preparations*	56

HOOPER'S

ELASTIC MATTRESSES

OR CELLED BEDS,

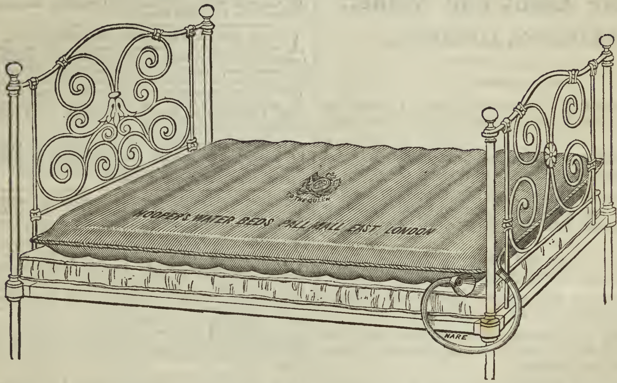
FOR WATER AT ANY TEMPERATURE

(From Zero to 212° Fahr.), OR FOR AIR.

ADAPTED TO

Surgical purposes, Paralysis, Fevers, Spinal and Pulmonary affections, and all Bedridden cases.

FOR THE PREVENTION & CURE OF BED-SORES.


TO THE QUEEN
HOOPER'S WATER BEDS PALL MALL EAST LONDON
WARE

Being readily packed, used on ordinary bedsteads, and retaining their elasticity unimpaired in all climates, they are well calculated for Export to India, China, and the Colonies.

In giving an Order the width of the Bedstead should be stated.

ORDERS BY TELEGRAM OR OTHERWISE IMMEDIATELY DESPATCHED.

Liberal Discount is allowed to Chemists, Druggists, and Shippers.

HOOPER & COMPY.,

SOLE MANUFACTURERS,

7 PALL MALL EAST, LONDON.

CHEMISTS' TRANSFERS.

32 Ludgate Hill, London
(14 *Doors from St. Paul's Churchyard*).

MESSRS. ORRIDGE AND CO., CHEMISTS' TRANSFER AGENTS,

May be consulted at the above address on matters of Sale, Purchase, and Valuation.

Immediate attention given to Foreign Commissions.

The Business conducted by Messrs. Orridge and Co. has been known as a Transfer Agency since the year 1846, and is well known to all the leading firms in the Trade.

VENDORS have the advantage of obtaining an opinion on Value derived from extensive experience, and are in most cases enabled to avoid an infinity of trouble by making a selection from a list of applicants for purchase, with the view of submitting confidential particulars to those alone who are most likely to possess business qualifications and adequate means for investment.

PURCHASERS who desire early information regarding eligible opportunities for entering business will greatly facilitate their object by describing clearly the class of connection they wish to obtain.

N.B.—NO CHARGE TO PURCHASERS.

ORRIDGE & CO., 32 Ludgate Hill, London.

MR. T. TRIPPIER,

Transfer Agent and Valuer,

79 ISLINGTON, LIVERPOOL.

FOR TRANSFER.

EAST LANCASHIRE.—Manufacturing Town, a Prescribing and light Retail Business. Neatly fitted shop, and good house.

IN THE SUBURBS.—A Dispensing and Prescribing Business. Large, well-fitted corner shop; large house. Rent low.

IN a north-western Seaport Town, established 30 years, a light Retail and Dispensing Business, returning £800 per annum. Handsomely fitted and well appointed shop. At low rent.

BATH.—A select Retail and Dispensing Business. Established 40 years. Premises on lease.

IN SOMERSET. A Business, with light Grocery attached. Returns, £1,500 per annum. Incoming low.

WORCESTER. An old-established Dispensing and Prescribing Business. One of the best stands in the town. Low rent. Moderate incoming.

LEAMINGTON.—A Dispensing and Light Retail Business. Handsomely fitted; double-fronted shop; good house.

No Commission is charged to Purchasers.

To facilitate matters, a reference required on parties applying for the first time.

Lists of Stock for Appraisement receive immediate attention.

PARTNERSHIP.

PARTNER.—Any gentleman with £2,000 to £3,000 may find an eligible opportunity to take the place of a partner desirous of retiring from a Wholesale Drug and Drysaltery Business, returning about £14,000 a year, and capable of great extension. The business premises, on which there is a lease at a low rental, are situated in the best position in one of the principal provincial towns. If accustomed to travelling it will be advantageous. Address, T. Y. C., Post Office, Sheffield.

BUSINESSES to be DISPOSED OF.

EAST END.—Nicely fitted Shop. Small Business. Returns average £240. Cause of selling ill-health. £200 required. Address, C. R., care of Hearon & Co., 5 Coleman Street, E.C.

A BONA FIDE MIXED DRUG BUSINESS, doing a good trade, to which is attached a good Dental practice, will be disposed of, together or separate. With or without about £500 worth of furniture. For particulars address, "Dental," 37 Wellington Street, Merthyr.

EXCELLENT opportunity in North Devon. No opposition. Retail Drug with Aërated Waters. Capital plant in good working order. Returns £500. Incoming low. Stock at a valuation. Good reasons for disposal. Apply, J. Laird, Appledore, Devon.

CHEMIST'S BUSINESS, on the South Coast, for immediate Disposal. Season just commencing. Best position in a fashionable watering place. None need apply who cannot command £700 cash. Address, Ph. C., 5 Milton Place, Milton, near Gravesend.

FOR DISPOSAL, an old-established Chemist's and Dentist's Business. The proprietor leaving town. Returns £650. Profits £350. Rent £25. Price £500. Apply, Mr. Whitehead, Mr. Mather, Corporation Street, Manchester.

LEAVING THE TRADE.—Immediate disposal, a light Retail Business in one of the best Towns in Lancashire; shop large and well fitted with good house (on lease if required). Returns nearly £700, paying 50 per cent. Price £500, or £50 goodwill. Stock and fixtures at valuation. Apply, "Alpha," Messrs. Jas. Woolley, Sons & Co., Manchester.

TO CHEMISTS AND DRUGGISTS.—For Sale, an old-established Business, which has been carried on for the last fifty years by the present owner, at Morpeth. Any reasonable offer will be accepted. Apply to C. H. W., Central Station, care of Messrs. Smith & Sons, Newcastle-on-Tyne.

IN a thickly populated district of a Midland County Town. Established 20 years. Doing a good petroleum trade. Returns over £10 weekly, and capable of increase. Double front. Rent £20. Rare opportunity for a new beginner. Price £250 to an immediate purchaser. Proprietor declining the trade. Address, "Medical," Post Office, Midland Road, Derby.

IMMEDIATELY.—A small light Retail Business, S.W. district. Everything in first-rate order, and most satisfactory reasons assigned for disposing of same. Anyone seeking an opportunity to invest a small amount of capital will find this one well worthy their attention. Full particulars on application to "Beta," 38 Riverhall Street, Wandsworth Road, S.W.

FOR DISPOSAL.—In the centre of a large manufacturing town in North Staffordshire, an old-established ready-money Business. Returning over £1,000 per annum; with a seven years' lease of premises. Private entrance. Reason for disposal, owner retiring. For full particulars (to bonâ fide purchasers only), address, A. Z., Post Office, Stoke-upon-Trent.

A READY MONEY LIGHT RETAIL AND DISPENSING BUSINESS, situated in the principal street of a large seaport in the South of England. Has been in the same family 26 years. Average profits £282. Price £550. Large house at low rental. Apply, M. E. W., care of Messrs. Barron, Squire & Co., Bush Lane, Cannon Street, E.C.

LIVERPOOL.—A Dispensing and Retail Business, in a rapidly increasing neighbourhood. The proprietor will be willing to give an introduction if purchased at once. Price £400. Satisfactory reasons for disposal. For further particulars, T. A. T., care of Messrs. Evans & Sons, Hanover Street, Liverpool.

THE CHEMIST AND DRUGGIST

COLONIAL BUILDINGS, 44A CANNON STREET, LONDON, E.C.

Published on the 15th of each Month.

Subscription, 10s. per year, payable in advance; commencing from any date.

Post free to every country in the world.

Single Copies, 1s. each.

A Copy of THE CHEMISTS' AND DRUGGISTS' DIARY, published annually, is presented to every subscriber. Price to non-subscribers, 3*s.*

Advertisements, Remittances, Subscriptions, Orders for Copies, and all communications must be addressed to "THE PUBLISHER OF THE CHEMIST AND DRUGGIST."

Cheques and Post-office Orders to be made payable to *Edward Halse* and crossed Martin & Co.

No one is authorised to collect money without production of the Proprietors' lithographed form of receipt.

Receipts not forwarded for subscriptions, nor for any sums under 10*s.*, unless the remittance be accompanied by a stamped envelope.

SCALE OF CHARGES FOR ADVERTISEMENTS.

One Page, 5*l.*; Half Page, 2*l.* 15*s.*; Quarter Page, 1*l.* 12*s.* Special Rates for Wrapper and the pages preceding and following literary matter. The above Scale of Charges will be subject to a discount of 10 per cent. upon seven, and 20 per cent. upon Thirteen insertions, prompt quarterly payments; the Thirteenth appearing in the DIARY AND TEXT-BOOK. Seven lines and under, 4*s.* 6*d.*; every additional Line, 6*d.* Advertisements of Assistants Wanting Situations (not exceeding 12 words) inserted at a nominal charge of 1*s.* each.

All Advertisements intended for insertion in the current Month must be sent to the PUBLISHER OF THE CHEMIST AND DRUGGIST on or before the 12th, except Employers' and Assistants' Advertisements, which can be received up to 10 A.M. on the morning previous to publication.

Subscribers are requested to observe that the receipt of THE CHEMIST AND DRUGGIST in a *Green Wrapper* indicates that with that number the term of subscription has expired, and that no further number will be sent until the same has been renewed. We issue the notice very respectfully, not that we distrust our Subscribers, but simply because we find it impossible to keep an immense subscription list like that we now have, extending to almost every town in the world, in order, without an exact system like this.

Terms for Advertisements over the Leaders may be obtained on application to the Publisher.

Subscribers residing abroad can remit subscriptions, either by Post-Office Order, or order on London houses. Or they may send the currency of their own country, according to the following tariff :—

Australasia	10*s.*	India	5 rupees.
Austria	5 florins.	Italy	11½ lire specie.
Bavaria	10 marks.	Japan	2½ guldens.
Belgium	12½ francs.	Java	6 florins.
Brazil	5 milreas.	Mauritius	3 dollars.
Buenos Ayres	2½ dollars.	Mexico	2½ dollars.
Canada	2½ dollars.	Norway	2½ dols. specie.
Chili	2½ dollars.	Monte Video	2½ dols. specie.
China	2½ dollars.	Portugal	2½ milreis.
Cuba	2½ dollars.	Prussia	10 marks.
Demerara	2½ dollars.	Russia	3½ roubles.
Denmark	4½ R. dollars.	South Africa	10*s.*
France	12½ francs.	Spain	2½ dols. specie.
Germany	10 marks.	Sweden	2½ dols. specie.
Greece	15 drachmæ.	Turkey	50 piastres.
Hamburg	8 marks ct.	United States	2½ dollars.
Holland	6 guldens.	West Indies	10*s.*

THE MONTH

An attractive series of pharmaceutical papers is announced for the meeting of the British Pharmaceutical Conference at Bristol on August 24 and 25. We shall prepare a condensed report of the whole proceedings for our next issue (September 15), which number will also be our usual Educational issue, giving particulars respecting the various medical, pharmaceutical, and scientific schools.

The Irish Pharmacy Bill and the Sale of Food and Drugs Bill are among those which received the Royal Assent on Wednesday night last. The Registration of Trade Marks Bill has also passed both Houses, and now only awaits Her Majesty's signature.

Up to the moment of our going to press neither of these Acts were printed. Clause 6 of the Food and Drugs Bill was the last bone of contention. The Lords amended the original wording, and passed the clause thus:—"No person shall sell any compound article of food or compounded drug which is not composed of ingredients in accordance with the demand of the purchaser, under a penalty of twenty pounds." The Commons tried to restore the old wording allowing drugs to be compounded in accordance with a prescription or with regulations to be laid down by the Medical or Pharmaceutical Councils. All this was mere nonsense and the Lords again disagreed, on which the Commons yielded.

In the Irish Pharmacy Act the clauses giving the title of "pharmaceutical chemist" are retained intact. We have already explained how unjust this is, and it might have been prevented if the Pharmaceutical Council had not shown so much fear of offending Sir Michael Hicks-Beach. Lord Granville uttered a mild protest against the proposal in the House of Lords, but there was no serious opposition.

The Trade Marks Act will make it incumbent on every person using a trade mark to register it, paying a certain fee at an office to be provided for that purpose. If the trade mark be not registered the owner will not be entitled to bring an action against any other person for infringement thereof. We gave full details of the Act last month.

The Pharmaceutical Council had no important subject to discuss at their August meeting, the reception of committee reports occupying most of the time. It is not deemed advisable to establish a pharmacy laboratory at present as suggested last month by Mr. Schacht. The professors reported in cheerful terms respecting the progress of their respective classes. Messrs. H. G. Greenish and J. L. West had been awarded the Bell scholarships. The Pereira medal had not this year provoked a competition. Some members of the Council thought the marks now required of successful major candidates before they could be eligible to compete for this medal were too many. It appears that only one gentleman was eligible this year, and he had not presented himself. A letter from the Philadelphia College of Pharmacy was read, inviting the attendance of British pharmaceutists at the meeting of the American Pharmaceutical Association at Philadelphia in 1876, and promising such as may come every possible courtesy. Mr. Hampton and Mr. Greenish thought a delegate should be sent from the society, or, at least, that a portion of somebody's expenses might be paid. Mr. Williams and Mr. Sandford, however, thought they were not called upon to regard the invitation so seriously, but understood it as only a friendly notice that the college at Philadelphia would show courtesy to any English pharmaceutists who might visit them during the exhibition year.

Mr. Ekin, of Bath, is to deliver the inaugural address to the School of Pharmacy, Bloomsbury Square, in October next.

We ask the attention of those interested in the Pharmaceutical Benevolent Fund to the question discussed in this number as to the possibility of abolishing the system of canvassing for votes on the part of candidates for annuities.

A brilliant meeting of the British Medical Association was held in Edinburgh from August 3 to August 6 inclusive. Sir

Robert Christison presided, and delivered a long address tracing the history of medical education at Edinburgh, and afterwards criticising certain points in the present systems. He concluded with an able argument against the proposal which has been so urgently demanded to form conjoint boards of examination for the United Kingdom. We have condensed for this journal one of the sectional addresses.

Anyone who will read carefully this address of Dr. Begbie's in connection with the brilliantly lucid article on "The Origin and Propagation of Disease," by Dr. Dalton, of New York, which has appeared in this and our preceding number, can scarcely fail to recognise that the practice of medicine in these latter days is certainly securing for itself a true scientific basis, from which the happiest results may fairly be anticipated.

The druggists of Belfast are endeavouring to form an Association for the advancement of trade and scientific purposes.

The meetings of the British Association for the Advancement of Science will commence at Bristol on August 25. Sir John Hawkshaw, F.R.S., is the President elect. Mr. A. G. Vernon Harcourt, F.R.S., will preside over the chemical section.

The French Minister of Finance hopes to be able to introduce a measure to tax pharmaceutical specialities at the commencement of next session. He does not anticipate the "millions" which the Viscount Lorgeril sees in the scheme, but thinks something may be extracted.

An adulteration case at Leeds has broken down. A jam manufacturer was summoned on the analyst's certificate that his delicacies contained turnips, potatoes, or similar vegetable substances. Dr. Hassall's report flatly contradicted that of Mr. Fairley, and, according to the inspector's statement, the latter was himself "afraid he had made a mistake." The magistrate thought such mistakes were very serious.

Does anybody want a female skeleton as a companion for life? We notice that somebody is advertising one in our Exchange Column this month. The announcement should also appear in the *Matrimonial News*.

A correspondent of the *Lancet* has clipped the following advertisement from one of the daily papers:—

EXAMINATION.—Wanted, a gentleman to pass a simple examination in general education; will be well paid.—Medicus, Post Office.

In reference to which he very properly remarks:—"If offers of this open nature can find ready insertion in the public prints, I fail to see why gentlemen in need of burglars, forgers, cut-throats, and so forth, should not address their peculiar public through similar channels."

The death is announced of Mr. John Churchill, medical publisher, in the 73rd year of his age. We also regret to notice the death of Mr. John Kingsford Field, senior partner in the firm of J. C. and J. Field, of Lambeth, which occurred at his residence, Weybridge, on the 14th ult. Mr. Field was 56 years of age.

Mr. Medley, chemist, Irongate, Derby, was found dead in his bed on the 12th ult. At the inquest a verdict of death from heart disease was returned.

A sad accident occurred in a chemist's shop at Hull last month. Mr. George Beall, of that town, was dispensing a prescription, and set down on the counter a glass containing prussic acid. His little boy, two years and six months old, took up the glass, and, unnoticed, drank the contents. He died a few hours afterwards.

MR. G. F. SCHACHT.

BRISTOL is the pharmaceutical metropolis for 1875, and this Western city, with its lovely consort, Clifton, has of late years produced so many and such eminent lights of the science that a visit there will not be time wasted if we can ascertain what are the conditions of soil and atmosphere so evidently favourable to pharmaceutic development.

Here is a curious fact illustrative of the high reputation which Bristol pharmaceutists have won among their fellows. Since 1869 the Pharmaceutical Council has annually selected some one from the ranks of the profession to deliver the inaugural address of its educational session. Exactly half of the six orations yet delivered on those occasions have been the work of Bristol men. Mr. Schacht delivered the address in 1870.

The subject of our notice is a representative man at this moment in duplicate aspects—first, as one of the worthiest representatives of Bristol pharmacy (this is the verdict of Bristol itself); and secondly, as one of the chief officers of the British Pharmaceutical Conference. He was one of the founders of that body, has held office as treasurer since 1870, and has ever been among its most ardent friends. At home he is President of the Bristol Pharmaceutical Association, and has helped to show how easy it is to solve the troublesome problem of provincial pharmaceutical education. But on this point Mr. Schacht's enthusiasm runs away with some of his judgment. He has patiently fought a losing battle for years against the apathy, the *vis inertiæ*, and the selfishness of pharmaceutists, in his earnest desire to promote a sound system of technical education available to all youths entering the business in every part of the country. But others with desires similar to his own see clearer than he does that the schemes he has suggested require for success some such men as Schacht and Stoddart in every town where they are to be applied, and in our generation at least that provision is not destined to be frequently realised.

For several years past Mr. Schacht has occupied a seat at the Pharmaceutical Council table, and the position he takes in all the discussions which occur there is well understood. In that council he plays a *rôle* somewhat similar to that which characterises Professor Fawcett "in another place." He studies each subject as it arises, and often finds an opposite side where no one else could distinguish even a chance for argument, always supporting his views with originality and acumen. Our old English poet tells us—

> certain ne wight ther is,
> Who doth nor sayth sometime amis;

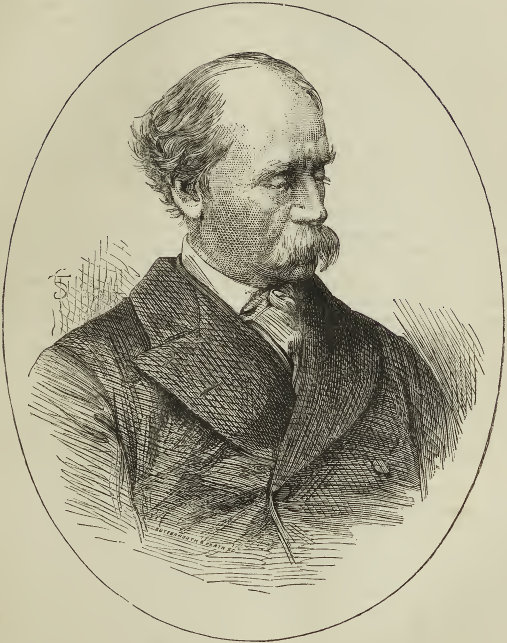
and Mr. Schacht's one fault as a debater is, perhaps, his too ready appreciation of both sides of a question discussed. Occasionally, as for example, in the recent debates on the Irish Pharmaceutical Bill, this habit of seeking for another side to a question tends to reduce the value of his support of the party or association which he is expected to defend.

Mr. Schacht's business life has been almost exclusively connected with Clifton. He was apprenticed with Messrs. Savory & Moore for seven years, and was one of the very earliest students at the pharmaceutical laboratory in Bloomsbury Square. His name figures in the Calendar as having in 1845 taken first prize for Organic Chemistry and second prize for Chemistry, the present editor of *The Pharmaceutical Journal* taking the second and first places respectively in those subjects that year. Mr. Schacht is also credited with a prize for Practical Pharmacy, and a certificate for Materia Medica. After passing both Minor and Major examinations, Mr. Schacht established himself in Clifton, and has continued there to this day.

We hope many of our readers who have not attended the meetings of the British Pharmaceutical Conference before will be induced to go to Bristol this year and make the personal acquaintance of the gentleman we have been writing about, and of his able coadjutors.

THE CHEMIST AND DRUGGIST PORTRAIT GALLERY.

XIX.


BUTTERWORTH & HEATH SC.

Yours very truly
G F Schacht

MR. G. F. SCHACHT.

CHARITY ELECTIONEERING: THE PRESENT POSITION OF THE CONTROVERSY.

The Papers issued by the Charity Voting Reform Association are—

I.—*Report of the Committee for ascertaining the wishes of the Subscribers to the Royal Hospital for Incurables.*
II.—*Charity Electioneering, or a Summary of the Objects and Views of the Charity Voting Reform Association.*
III.—*Collection of Papers relating to the election of beneficiaries to charitable institutions.*
IV.—*Charity Electioneering, illustrated by five letters.*
V.—*Correspondence relating to the Canvassing and Voting System.*
VI.—*Experiences of an Incurable in search of a Pension.*
VII.—*Annual Report of the Association.*

Articles in favour of the views advocated in the above papers have appeared in the *Times*, *Telegraph*, *Standard*, *Pall Mall*, *Guardian*, *Record*, *Daily News*, *Saturday Review*, *Spectator*, *City Press*, *Lancet*, *British Medical Journal*, *Echo*, *Medical Press Circular*, *Macmillan*, *All the Year Round*, *&c.*

The Pamphlets that have appeared in support of the existing system are:—

I.—*Thoughts upon the Modes of Election.* Written in 1849: reissued in 1872. 6*d.* West, Bull and Mouth Street.
II.—*Letter in defence of the present system of Electing Candidates*, by WILLIAM BANTING.
III.—*Elective Charities and their Opponents.* Unwin Brothers.
IV.—*Present Mode of Election to the London Charities*, by CHARLES HOOD, Esq. H. & L. Collinridge.

Articles in favour of the existing system have appeared in the *London Mirror*.

THERE are few who take any lively interest in our great Charitable Institutions who have not heard more or less of the "din of war" now going on respecting the process of application for, and the mode of selecting those who shall eventually receive, the benefits to be granted.

The "Charity Voting Reform Association" now takes its place in the "Hand-book of Metropolitan Charities." It is an established institution, though it is to be hoped but temporarily so. The office is at No. 30 Charing Cross, where its publications may be obtained. This association has raised many and strange thoughts in the minds of those who had quietly and thankfully taken it for granted that every guinea they give to these charitable institutions was a pure and solely beneficent act of charity. To disturb such thoughts is a hard and a thankless office, and while on the one hand a heavy responsibility attaches to those who have raised this question if it be raised without just ground, on the other hand a heavy responsibility now rests upon managers should they continue to maintain a system fraught with hardship and injurious consequences to the candidates and their friends, if the allegations of the Charity Voting Reform Association can be maintained; more especially upon those who, viewing the facts in the same light as the association, have nevertheless supported and still do support this system, simply on the ground that it is profitable in a money point of view. For as put in the "Experiences of an Incurable," "a great institution is one thing, poor people are another thing; you may do good to the one by doing mischief to the other."

The principles of the association and the opposite views of the supporters of the existing system may be fairly gathered from the various papers named at the head of this article. The whole collection of pamphlets may be obtained for half a crown, and a couple of hours' reading would make anyone acquainted with the leading facts.

This subject is an important one, far more so than might be at first sight supposed by those who are not acquainted, on the one hand, with the enormous incomes of these institutions, and, on the other, with the vast amount of labour and expenditure incurred in making application for the benefits which they dispense. The following are the principal points in the controversy:

Canvassing.—The objections to canvassing are stated to be "the anxiety, labour, and expense" thrown upon the candidates and their friends. Candidates, it is said, are induced to enter into this competition "in hopes of a prize," to go in for it as in a "Lottery." It is objected that to set (as in the Governesses' Benevolent Institution) 130 candidates to canvass for six appointments is deliberately and cruelly to involve great numbers in labour, anxiety, excitement, and expense, with the absolute certainty of disappointment.

On the side of the supporters of the present system "It is feared that any plan to dispense with the covenant of labour either in business or in doing good would only demonstrate the folly of its proposer." *

Now look carefully at this statement respecting the necessity of labour in "doing good." The managers of the institutions are the parties "doing good." The candidates are the recipients of the good done: but in practice the managers precisely reverse the rule above given. In the choice of candidates they leave the "doers of good" free from labour, and make the would-be recipients do the work.

The association holds as strongly as the other party that good cannot be done without labour, and they hold that those who undertake the responsibility of the management of these institutions are bound to work themselves, but at the same time they are bound also to relieve the suffering class as far as possible from unnecessary burdens. They hold that it is unjust to permit a large number of destitute candidates to labour and spend their strength in the hope of a prize, which it is well known only a few can receive. It is clearly evident that a distressed widow will grasp at any straw, at any remote chance, little knowing in the first instance what a canvass involves, and as, under the existing system, canvassing is the only method of obtaining the desired end, it is gone through as a necessity by those who are able to face it, while the most destitute are deterred even from making the attempt.

The argument in favour of canvassing is well put by a clergyman:—"The experience of thirty years convinces me that on the whole far greater good comes out of the system of canvassing than the evil that may incidentally arise: the wide-spread information given continually calls out sympathy for a case, and from quarters the most unlooked for help comes to the most helpless."

No one would for one moment assert that no good arises from canvassing. The statement above quoted is perfectly true as regards the advantage to considerable numbers. The existing system may be good as regards those who succeed, but it must be remembered it is the cases who benefit that are heard of; those who spend their strength in fruitless and unrequited labour are of necessity those lost sight of. A few successful canvassers are heard of, and make a great impression; the multitude who fail make none. The good done is prominent, and, if those who eventually benefited were the only parties to be considered, the case would be very different, though even then the question would remain, are the "doers of good" justified in throwing the labour and expense of a canvass on the recipients? Are those desirous of doing good justified in using the distressed classes as an advertising medium, in order to bring more money into the coffers of the institution, even taking it for granted that the money so obtained will be used for a good purpose? Would it not be better for those to whom the five, the two, or the one talent are committed, to use well the more limited means entrusted to them, rather than to endeavour to grasp at more talents by questionable means?

---

* *Elective Charities*, p. 16.

Mark, again; in the above quotation, which at first sight appears so powerful in favour of canvassing, it is said, "Greater good comes out of the system of canvassing than evil," that is, you benefit certain individuals at the expense of others. Your opinion may be that the good preponderates, but is that a question you have any right even to entertain? Have you a right to inflict evil on some distressed persons in order to enable you to do more good to others, because, as you think, the balance may be in favour of good?

The income of an institution by no means represents the good done, as long as the expenditure by the candidates is left out of the question. The following extract from "Charity Electioneering" touches on this point:—

"The fact is that the annual expenditure incurred by, or on behalf of, the vast number of candidates continually engaged in canvassing bears a very large proportion to the sum granted in pensions or distributed in other forms of relief.

"This expenditure is lost sight of by the general public, since it never appears on the accounts of the charities, but is quietly absorbed by the Postmaster-General and the stationer."

It might be added that the unsuccessful candidates themselves are also lost sight of: *their* labour, anxiety, and disappointment are not taken into account in the statements put forth of "good done."

It must be freely admitted by all that our utmost efforts to do good are liable to be, and almost inevitably must be, to some extent defective; nothing is or can be perfect: that fact is, however, no justification for maintaining an abuse of which we have become aware and which might be corrected.

Finally, as regards the profits arising from canvassing, even assuming that the increased income therefrom be as great as its most strenuous supporters would venture to assert, it must still be remembered that the old saying, "Get money my son: get money honestly if thou canst, but get money," is not the true guide for a charitable institution.

Traffic in votes is another head prominently brought forward by the Charity Voting Reform Association. It consists, first, of exchange of votes one candidate with another for the same institution—A giving up all votes to B till B gets in, on condition of B afterwards assisting A to the same extent. Next there is the exchange of the votes of one institution for those of another. In both these transactions "the personal responsibility and trust involved in the power of voting are utterly ignored. Those who work cases systematically beg all kinds of votes merely for the sake of barter. If it be desired to get an orphan into an asylum, 'Governess,' 'Idiot,' 'Blind,' 'Paralysed,' 'Incurable,' votes are all begged merely to exchange for votes of the desired institution."

Again, there are the professional vote jobbers:—"The professional brokers or vote-jobbers, men and women who, working for their own profit, contract to get cases into institutions at certain prices. These people know the cost at which they can obtain votes, and charge accordingly; they beg for the cases they have taken in hand, and, when proxies are given with the name of the candidate not filled in, they sell them to others."

The following is a quotation from the pamphlet by Mr. Laing, the original Secretary to the Governess Institution, and a great supporter of the present system:—

"It is objected that subscribers can and do sign their proxies without filling in their votes, and then entrust these blank acceptances to other subscribers to act as their proxies; that the polling papers thus entrusted are lent by the friends of some candidates to the friends of others, to be returned at a future election; and thus the election becomes, after all, a matter of mere interest.

"The conclusion is entirely incorrect, and is no result of the premises. The simplest answer is, that it is not true."

Mark: the whole drift of this argument lies in the words "becomes a mere matter of interest," and "it is not true."

The impropriety of such traffic is thus fully admitted. What, then, can be the objection on the part of such men to the rule proposed by the Charity Voting Reform Association:—That all votes shall be marked by the voters themselves, their initials being placed against the name voted for, and that the polling papers shall be returned direct to the secretary?

Such a simple proceeding would put a stop to the system of traffic in votes.

Why, in so many institutions, is not that rule adopted? Simply because the practice so condemned by Mr. Laing in his pamphlet is approved and maintained by others. The following extract is from the pamphlet by "A Governor of the Royal Hospital for Incurables," just published.

"Persons accustomed to the work of elective charities are aware that votes are frequently delegated by the holders to persons to whom for reasons of friendship or convenience they are willing to entrust them. Thus a number of blank proxies get into circulation, and although in the end the votes come to a proper case, since every candidate is eligible, yet that particular case is not one intended by the original subscriber who has presented his vote to a friend. Another result follows: an exchange of votes as between different institutions is established; still the same legitimate end is realised in a less direct way, as only the proper object to any institution can be elected." . . . . .

"A designing person may, upon false pretences, prevail upon a subscriber to part with his blank voting paper, which may, somehow or other, be made the means of obtaining money."

Now consider: Mr. Laing condemns the system of traffic in votes and denies its existence. Next the anonymous gentleman above quoted acknowledges and publicly defends the system, which he describes as "a number of blank proxies getting into circulation," "delegated to others for reasons of friendship or convenience." "Another result, exchange of votes as between different institutions." "Designing persons under false pretences prevail upon subscribers to part with their blank voting papers, which are made the means of obtaining money."

A more thorough exposure of vote traffic than is here given by one of its supporters cannot be found in all the publications of the Charity Voting Reform Association. And that the action of "designing persons," or, as they are now called, vote brokers, is in very fact carried on as described above, let the reader turn to p. 66 of "Collection of Papers," where a special caution against them is given as issued by the British Home for Incurables, as follows:—

BRITISH HOME FOR INCURABLES.

"The Board of Management beg to caution subscribers against sending money or voting papers to persons unknown to them who may solicit help for candidates. It is well ascertained that considerable sums of money, as well as voting papers, have been fraudulently obtained by persons who put themselves forward to assist candidates and promote their election. Candidates naturally are glad to accept such offers, and thus they unwittingly place themselves in the hands of unprincipled persons, many of whom, under pretence of working for a candidate, issue to the subscribers most touching appeals for help in votes, and indirectly for money. In many cases they are successful; and it is needless to add the candidates do not receive the money so obtained, and that the votes, when not filled in by the subscriber for the particular candidate, are sometimes sold or disposed of for the benefit of the canvasser. Those engaged in these practices work upon a regularly organised system, having many addresses and various names."

The vote entrusted to a subscriber ought no doubt to be looked upon as a "sacred trust," to be used by him conscientiously and to the best of his ability in selecting those cases which in his opinion would be the most worthy recipients of the benefits to be conferred. Votes are not to be used as matters of "friendship" or "convenience," nor are they to be carelessly parted with to "designing persons" who make money by them.

The large number of candidates placed on the lists of applicants is another point brought forward, and, no doubt, one of some moment, though it would be by no means a matter of equal importance with the previous questions discussed, provided canvassing be put a stop to, and all labour and expense be thus spared to those making application for the benefits of an institution. Even under such circumstances, however, the admission of many more cases on to the list than the managers know well can be successful is still open to the objection of holding out false hopes to the candidates and involving them in greater disappointment. It certainly does appear that it would be well, as recommended by the association, to confine the list of candidates to a moderate number as compared with the appointments to be made.

Public Polling Days.—As to the scandal of the public polling day (the Derby Day of Charity, as it was appropriately called in the *Times* not long since), there seems to be less repugnance to the idea of abandoning it, for it is, no doubt, felt that there is little to be said in its favour, except that it brings money, and there are but comparatively few prepared to defend such an "auctioneering, gambling system," where, in fact, the very object aimed at is to induce the rich to cut out the poor and friendless, by paying down their money in favour of their own *protégés.*

The managers' object, no doubt, is the creation of public sympathy by the exhibition of such long lists of suffering. Could not that object be effected by publishing the number of cases rejected from want of funds, without subjecting these poor people to the deferred hope and ultimate disappointment involved in keeping their names on the list?

The objectors to the proposals of the association appear almost entirely to ignore the fact that it is a "Charity Voting Reform Association," not a "Charity Voting Abolition Association." The two positions are perfectly distinct and ought to be so treated. The pamphlet "Charity Electioneering," put forward by the Association as its programme or declaration of principles, opens by saying—

Its main object is to abolish the great abuses which have gradually overgrown the voting system, such as—

The Absence of Comparative Selection;
Trafficking in Votes;
Canvassing;
Public Polling Days.

To abolish "the abuses," not to abolish the "voting," is the main object; and further, these abuses may be abolished by the following four simple suggestions:—

1. Its being made essential to the validity of a vote that the initials of the voter be placed against the name voted for, and the signature appended in full, with address and date. The paper to be returned direct to the secretary by the voter. The delivery of votes in bundles as collected by friends and brokers not to be permitted. (This would put a stop to trafficking.)

2. Canvassing by circular, or by any mode costing money, to be prohibited under pain of exclusion from all prospect of benefit, or forfeiture of all benefits if already elected. Private canvassing to be discouraged as much as possible.

3. The discontinuance of the public polling days, and the putting a stop to the purchase of votes at the time of election, whereby the wealthy are enabled to exclude the poor.

4. The list of candidates not to be excessive in comparison with the appointments to be made.

The great questions at issue may be divided into two heads—

1st. The abolition of those abuses which render an application for the benefits of an institution an expensive, laborious, and exciting race, where those with friends and money at command must as a general rule succeed, to the exclusion of the more destitute.

2ndly. The determination of the best mode of selecting the beneficiaries from the list of applicants.

The first is absolutely demanded by the association as an act of mere common justice to the poor, to whom these benefits are held out as objects to be sought for. They maintain that you have no right to allure poor people into the labour and expense of a canvass in hopes of a prize. If you have anything to give them, give it them freely and heartily, but do not set them to canvass and scramble, spending their money and strength merely with a view to bring more talents within your own disposal.

The second question (namely, that of the best mode of making the final selection amongst the applicants) comes under another category. A man may say, "I have a right to do what I will with my own;" so may subscribers to charitable institutions say with regard to their votes. The truth of this assertion, however, depends upon circumstances. It is limited in the first instance by whether "doing what you will" is inflicting an injury on others, as in the case of promoting canvassing and vote traffic. It is limited again by whether you are doing an injustice, as, for instance, by giving and collecting votes for the less pressing case, and thereby diverting the subscriptions of others from their legitimate use—from the purpose for which they were given, diverting them to purposes for which they would not have been given had the donors known to what object they would be applied.

The true view of a vote for the appointment of beneficiaries to charitable institutions is given in the "Collection of Papers," p. 66.

"A vote is a trust and a duty, which each voter is bound to use and perform to the best of his power, in furtherance of the real object of the institution. He has no moral right to use his influence to promote the election of a person in whom he is only personally or privately interested; and, what is more, the fact of accepting the power to vote involves an implied undertaking that he will not even use it carelessly. The careless use of a vote in favour of one candidate is an absolute wrong done to another. A man has no right by the power thus entrusted to him to vote against, and thus do an injury to, a more deserving case. The point which it is most desired to put forward is that a vote is a trust and a power confided to the subscriber for the definite purpose of advancing the object of the institution; it is not a property or privilege which the subscriber has purchased, and which he is at liberty to give, sell, or part with irrespective of the manner in which it may be ultimately made available."

If from the above it be assumed as proved that a vote is not a privilege bought and paid for and then free to be used according to one's own fancy or interest, but simply and solely in such a manner as best to carry out the real design of the institution, then comes the question, By what machinery can this selection be best carried out? The personal power conveyed by the privilege of voting, being shown to be in fact neither more nor less than a personal responsibility, the pleasure and satisfaction of using votes for the gratification of friends or in the interest of dependants is gone, and where this responsibility is duly appreciated the desire would be, in nine cases out of ten, to transfer it to more capable hands, more capable from being better informed, and from having more time to give to the subject. The association put forward the following as their views on the really best agents to make the final selection, and the advice they give is—

"But, while in the first instance seeking to correct the abuses of the voting system, this association would by no means leave out of sight the great advantages to be obtained by the *abandonment* of that system, and the substitution of a committee appointed by the whole body of subscribers, who should, after thorough investigation, select the most needy, urgent, and friendless cases."

Again—

"This association, without hesitation, recommends the abolition of voting by the whole body of the subscribers, and the substitution of selection by a committee, after a careful investigation and comparison of the cases, whenever societies feel themselves strong enough to make the change.

"If the permanent managing directors shrink from the responsibility of making the final selection of the candidates to receive the benefits of the institution, or do not feel themselves strong enough to withstand private canvassing, this special duty might be entrusted to a small committee to be elected at proper intervals by the whole body of the subscribers by means of voting papers."

At the same time the association appears to feel that this power of voting is loved and valued by many, and that it does tend to keep up the interest of a certain class of subscribers in the institutions. They therefore appear to make this broad distinction between the two great questions—"Reform of abuses," and "Abolition of voting."

As to the abuses of the existing system, they say "you have no moral right to permit their continuance: you are bound in honour and common honesty towards these poor people to put a stop to them."

But as to giving the preference to selection by a well-informed and trustworthy committee appointed for each election, they simply make the following suggestion:—

"As regards voting by the whole body of the subscribers, this association does not consider it essential that it should be abandoned, but they hope to see it given up in cases where the tone of charitable feeling on the part of the subscribers can rise to the higher standard of foregoing, for the good of the candidates, the real objects of the charity, that which they perhaps feel to be a privilege personally gratifying to themselves."

It is requisite, as will be presently seen, thus to point out carefully the distinction between reform of the voting system and its abolition.

From the date of the meeting at the Mansion House on

October 30, 1873, down to the latest official publications of the association—

Reform of the system has been the point insisted upon as essential.

Appointment by a committee has been recommended where circumstances will permit.

This distinction becomes extremely important, because the opponents of the association almost entirely ignore the question of reform, and cry out against appointment by committee. If the opponents feel that the question of the reform of abuses will not bear investigation they are right to shirk this subject, for no doubt there are many who would gladly see the abuses corrected who would not be willing to part with the power of voting. The public, however, are not misled, as is shown by the numbers joining the Charity Voting Reform Association (about 4,000), almost entirely drawn from the subscribers to the great voting charities.

The general feeling is shown, too, in a marked manner by the memorials to the managers of the Governess Benevolent and the Medical Benevolent institutions. These memorials are similar in effect, praying for the correction of the abuses in the existing system. Copies of the memorials were issued to the subscribers with alternative forms of reply. The results were—

	Assents	Dissents
Governess Benevolent	1,927	254
Medical Benevolent	2,086	250

It is clear that if the general body of subscribers who take the trouble to give an opinion are in round numbers 8 to 1 in favour of reform, it becomes a mere question of time and perseverance on the part of the association to effect their object. The managers of these great institutions are practically a self-appointed body, but, holding as they do, the position of representatives of the subscribers, they must eventually conform to the judgment of the majority of their constituents.

It is gratifying to see the committee of the Clergy Orphan Institution taking a noble lead in reform. It has just been decided, in accordance with a memorial from their subscribers, to abolish public polling days and to have the voting papers returned direct to the secretary. These are important steps in the right direction.

The memorial to the managers of the Governess Benevolent Institution was presented by Lord Shaftesbury, Lord Justice James, and the Right Hon. Russell Gurney, the Recorder of London, and they have since taken active measures to press the desired reforms. The action of such men in such a cause is sufficient guarantee that the reforms desired are no idle fancies, but that they deal with real, tangible and serious abuses.

THE ORIGIN AND PROPAGATION OF DISEASE.

A Discourse before the New York Academy of Medicine, with additions.

By John C. Dalton, M.D.

(*Continued from page* 225.)

We now come to a part of the subject which may seem to be less directly connected with medical doctrines; and yet it is one which, if it really have a bearing on pathology, gives to the whole question a character of still greater importance. That is, the true nature of the process of *fermentation*.

The more essential phenomena of fermentation have been known from time immemorial. If we add to a solution of sugar, or to any clear vegetable juice containing sugar, a small portion of yeast, and keep the mixture in a moderately warm place, after a few hours of apparent inactivity, certain remarkable changes take place in it: 1. The liquid becomes uniformly turbid. 2. It is more or less agitated by minute bubbles of gas, which are generated in its interior, rise to the surface, and escape there. 3. The sugar gradually disappears from the solution, and alcohol takes its place. 4. When all the sugar has been thus consumed, the gas-bubbles cease to rise, the liquid again becomes clear and quiescent, its turbid contents being slowly deposited in a whitish layer at the bottom; and, 5. This deposit is found to be itself a layer of yeast, often much greater in quantity than that originally added, and capable of exciting the same kind of fermentation in another saccharine liquid.

Besides this, chemical investigation has shown that the gas evolved is carbonic acid, and that the weight of the sugar which disappears is accounted for, within reasonable limits of accuracy, by that of the carbonic acid and alcohol produced, with a little glycerine and succinic acid formed at the same time. It is therefore a chemical transformation, in which the elements of the sugar are separated from their combination, and re-arranged to form other non-nitrogenous compounds.

But it is a chemical change which will not take place spontaneously. It requires the presence of yeast artificially added, or of a natural ferment, present in the vegetable juice. The theory of fermentation formerly in vogue was, that the nitrogenous matter in solution in the yeast excited, by its own molecular changes, the decomposition of the sugar; taking by itself no direct part in the chemical phenomena, and neither absorbing nor discharging any of the materials of the solution.

In enumerating these facts I do not always follow the exact chronological order in which they were discovered, nor do I wish to take up your time in alluding to all the details and varieties of fermentation. It will be sufficient for our present purpose to bear in mind simply the main features of the process, namely, the addition of ferment to a saccharine liquid, turbidity of the solution, decomposition of the sugar, appearance of alcohol and carbonic acid, and, finally, reproduction of the ferment.

Two hundred years ago Mr. Anthony Leeuwenhoeck was investigating all sorts of natural objects with his newly constructed microscopes, consisting each "of a very small double convex glass, let into a socket between two silver plates." He examined the blood-globules, the capillary vessels, the spermatic corpuscles, the structure of wood, of hair, of teeth; and with the same instruments he saw in yeast little globules collected into groups of three or four together. But he had too many other novelties, all attracting his attention together, to spend much time on any one of them, and he did not learn the nature or specific characters of the globules of yeast; he only determined the bare fact of their existence.

But in 1837 the French chemist Cagniard-Latour examined the yeast-globules with more care. He measured their size, and found them to be at most $\frac{1}{2500}$ of an inch in diameter. He declared that they were of a vegetable nature, and that they multiplied by the process of budding. He called attention to the fact that during the fermentation of beer the ferment increases in quantity, producing at the end of the process six or seven times as much yeast as was introduced at the beginning; and he first broached the idea that "it is probably by some effect of their vegetation that the yeast-globules destroy the equilibrium of the elements of the sugar."

The theory, however, was at that time premature, and it did not meet with general acceptance. The existence of the yeast-plant, so far as then known, was an isolated fact, confined to the single case of fermenting beer. The opposite theory, of the catalytic action of an albuminous liquid, was maintained by Liebig with all the force of his remarkable genius, and was consequently almost universally adopted. The yeast-plant was thought to be an incidental growth in the fermenting fluid, and not to have any direct or important connection with the process itself.

About fifteen years ago a new epoch was inaugurated in the history of fermentation by the brilliant researches of Pasteur. The existence and growth of a fungoid vegetation were now found not to be confined to the single case of beer-yeast, but to be a general fact common to the alcoholic fermentation of beer, wine, and bread, and also to a variety of other kinds, such as the viscous, butyric, and acetic fermentations. The fungus itself was industriously studied in its different genera and species, with their specific modes of growth and reproduction, like those of any other natural family of plants; so that the *Saccharomyces cerevisiæ*, or the yeast-fungus of beer, can now be distinguished from the other species of alcoholic ferments, as well as from the fungi of other kinds of fermentation.

The different view thus introduced is most distinctly expressed by Pasteur himself. "According to the whole theory," he says, "fermentation is a process correlative with death, and depends on the decay of albuminous matter; according to the new one, it is correlative with life, that is, the active growth and development of the fungus vegetation. . . . The yeast-globules are actual living vegetable cells, capable of producing the transformation of sugar, just as the cells of the mammary gland in a living animal transform the ingredients of the blood into the ingredients of the milk."

The discussions on this subject, which lasted for ten years, took a very wide range, and especially became connected with the kindred topic of "spontaneous generation." The experiments of Pasteur and others showed that the germs of the yeast-plant may be disseminated by the atmosphere, and that the same precautions which exclude the introduction of germs from without into a fermentable liquid also exclude the process of fermentation itself; so that we can now accept with confidence the double fact—1. That the growth and reproduction of the yeast-fungus will take place only in a fermentable liquid; and, 2. That such a liquid will ferment only when the yeast-fungus is present and in a state of active development.

The revolution in opinion on this point was so complete that, in regard to the alcoholic fermentation at least, its essential results were finally accepted by Liebig himself. In his last treatise on fermentation, published in 1871, he says: "There no longer remains any doubt as to the nature of the ferment of beer and wine. It is a cryptogamic vegetation, more or less fully developed. . . . We may conclude that the albuminous matters of the yeast take part in its action upon the sugar, and it is evident that these albuminous matters acquire their property of exciting fermentation by becoming an actual constituent of the yeast itself."

Consequently, the fermentation of a saccharine liquid is the result of vegetative activity. We add to the liquid a few cells or spores of the yeast-fungus. These grow and multiply, and the turbidity of the liquid is due to their increase and dissemination. They decompose its sugar, appropriate some of its elements, and leave as a result alcohol and carbonic acid. When all the sources of their nourishment are exhausted, fermentation stops, and the liquid becomes clear, the yeast-cells subsiding to the bottom. But the ferment has in the mean time been reproduced, like so much grain which has been sown, raised, and harvested; and a little of the deposit left at the bottom of the vessel, if introduced into another saccharine liquid, will in turn reproduce the process of fermentation.

It is impossible not to perceive a certain analogy between the general phenomena of fermentation and those of contagious and infectious diseases. The period of incubation which intervenes between the exposure to a contagion and the appearance of the malady—the regular course of the symptoms—their natural termination within a definite time, and the evident reproduction of the contagious element—all these facts were so many points of resemblance, which could not escape the attention of medical observers. The analogy, indeed, has long been recognised in our nomenclature; and the term zymotic diseases cannot mean anything else than diseases depending upon some cause which acts after the manner of a ferment. But this name was adopted only as a matter of convenience, and was understood altogether in a symbolical sense. Of late we have begun to suspect that after all it may be simply the expression of a literal fact.

A similar order of discoveries has recently been made with regard to putrefaction. This has a more immediate connection with pathology than fermentation, because it is a change which takes place in animal substances, while fermentation at least in its simpler forms relates mainly to products of a vegetable origin.

Putrefaction was formerly regarded as the natural and inevitable decomposition of dead animal matter when exposed to the oxygen of the atmospheric air. But in reality something else is necessary. In every putrefying liquid there are a growth and development of minute living organisms. If we take a clear solution of any nitrogenised animal or vegetable matter and expose it to the air at a moderate temperature, after a short time it becomes turbid. This turbidity is the first evidence of commencing putrefaction, and it is exactly analogous to the turbidity of a saccharine liquid which is beginning to ferment. Microscopic examination shows that it is due to the presence of innumerable *Bacterium*-cells, $\frac{1}{8000}$ of an inch long, by $\frac{1}{40000}$ of an inch wide, moving in every direction, and multiplying by a rapid process of subdivision. As long as putrefaction goes on, so long the *Bacteria* multiply. When it comes to an end the liquid becomes clear, and there is a quiescent layer of *Bacteria* deposited upon the bottom. The least particle of this layer added to another albuminous liquid will excite putrefaction in it, and will produce a new development of *Bacterium*-cells, the quantity of which is limited only by that of the albuminous matter which serves for their nourishment and growth.

Now, *Bacteria* are the smallest and most obscure of living things. Their minute size alone is a sufficient obstacle, with our present microscopes, to their complete and satisfactory study in all particulars. Nevertheless, some important facts have been established with regard to them. In the first place, they are undoubtedly vegetable in their nature, and consist of cells which multiply by division, not by budding. They require for their growth a temperature between the limits of freezing and boiling water. They consist of a protoplasmic matter, surrounded by an envelope of vegetable cellulose. They live upon nitrogenised and carbonaceous organic matters in solution, and, like other colourless plants, absorb oxygen and exhale carbonic acid. They present a variety of genera and species, which may be distinguished from each other with some approach to accuracy; and, of these, *Bacterium termo* is the most constant and indispensable inhabitant of putrefying infusions.

As to the true relations between bacteria and putrefaction, almost the same course of inquiry has been followed as in the case of the yeast-fungus and fermentation. At first regarded simply as an incidental accompaniment of the process, they are now considered as its essential and immediate cause. This view is distinctly stated by Dr. Ferdinand Cohn, to whom we owe more definite information on the natural history and microscopic characters of *Bacteria* than to any other observer. Dr. Cohn is a professed scientific and experimental botanist, and director of the Institute of Vegetable Physiology at Breslau. He was the first to establish, twenty years ago, the vegetable nature and structural relations of *Bacteria*, and he has recently contributed largely to our knowledge of their classification and general physiology. According to him the putrefaction of nitrogenous organic matters is neither a spontaneous *post-mortem* decomposition, nor is it a simple oxidation under the influence of the atmosphere. "It is rather a chemical process caused by the action of *Bacterium termo*. Just as sugar is never converted spontaneously into alcohol and carbonic acid, and is brought into fermentation only by the yeast-fungus, so nitrogenous organic matters never putrefy of themselves, but only by means of the vital activity and multiplication of *Bacteria*. . . . We may therefore," he says, "apply Pasteur's doctrine also to the decomposition of animal matters, and may adopt as true the seeming paradox that putrefaction is an incidental phenomenon, not of death, but of vitality.

The proof that living *Bacteria* are the cause of putrefaction and not merely its accompaniment, is that a putrescible liquid which has been sufficiently boiled and received in a super-heated glass vessel may be kept in contact with the atmosphere indefinitely without putrefaction, provided the access of *Bacteria* be prevented by a plug of cotton-wool. But, if the minutest portion of any liquid already infected with *Bacteria* be added, putrefaction at once begins. Dr. Burdon-Sanderson, by a series of very important experiments in 1871, has established the fact, which is also confirmed by the researches of Cohn, that contamination by the germs of *Bacteria* takes place, as a general rule, not directly from the atmosphere, but by means of water and unclean moist surfaces; while, on the other hand, the germs of the mold fungi, like penicilium and mucor, are more or less constantly present in the air, and so readily gain access to organic substances, even in a dry atmosphere. Consequently, such substances, if properly protected against *Bacteria*, do not putrefy, but, on the other hand, may become covered with a mold-fungus. Dr. Sanderson even cut out the muscular tissue of the thigh of a recently killed Guinea-pig, and hung it up under a bell-glass, using for this purpose a knife and hooks which had just been subjected to the flame of a Bunsen burner, but taking no other precautions; and for thirty-one days, though the exposed tissues were overgrown with penicilium, there was no development of *Bacteria*, and no evidence of putrefaction.

The natural history of *Bacteria* is especially connected with the question of spontaneous generation, because they are the only class of organisms now remaining in which reproduction by spores has not yet been discovered, and because they appear so promptly and abundantly in all putrescible liquids under ordinary exposures.

Whatever may be the difference of opinion, therefore, with regard to the possibility of spontaneous generation within limited and exceptional conditions, there is hardly a doubt remaining that as a rule, in the regular operations of nature, the *Bacteria* or their germs are, in point of fact, conveyed from one putrefying substance to another, and that putrefaction is a process excited by contagion, and accomplished only by the growth and nutrition of *Bacteria*.

It was an important discovery, when it was found, ten years ago, that *Bacteria* might be developed in the interior of the living animal organism. In 1863 and 1864, Davaine showed that in the disease of sheep, known in France as *charbon* or *sang de rate*, and called by the Germans *milzbrand*, the blood of the affected animal, during life, contained *Bacteria*. He showed that the disease might be communicated by inoculation to other animals, always with a fatal result, and always with the development of *Bacteria* in the blood previous to death. He afterward extended the same observation to cases of malignant pustule, which he declared to be one form of the *sang de rate* disease.

In 1868 Vulpian found that a fatal disorder might be produced in frogs by the administration of cyclamine; that the malady was accompanied by the development of *Bacteria* in the blood, and that inoculation of this blood reproduced the disease in other healthy animals of the same species.

About the same time, Professors Coze and Feltz, formerly of the University of Strasbourg, had been making researches in a similar direction. They injected putrescent liquids into the veins or subcutaneous tissue in dogs and rabbits, producing in this way a fatal artificial *septicæmia*; and they found that *Bacteria* were developed in the blood of the animal simultaneously with the appearance of the febrile condition. But the effect produced did not stop there. The blood of such an animal, though not itself putrid, had become infectious, and would excite *septicæmia* in another animal by inoculation. A still further remarkable result was obtained from these experiments: "By reproducing in this manner," the authors say, "several successive inoculations, it becomes evident that the infectious element is at last more active than the putrescent matters themselves. Injection of putrescent liquids is not so rapidly fatal as inoculation of the blood of an animal already infected."

These facts have been confirmed by the observations of Davaine and Vulpian, which show the extraordinary activity of infectious blood, even at a high degree of dilution. Davaine found that putrefied bullock's blood, injected into the subcutaneous tissue of the rabbit, was rarely fatal in doses of less than $\frac{1}{100}$ of a drop, and never so in less than $\frac{1}{2000}$. But a series of twenty-five successive inoculations showed that *septicæmia*, once established, could be transmitted to the healthy rabbit by a dose of infectious blood so diluted that it represented only one-trillionth part of a drop. Vulpian injected a rabbit with infectious serum, and produced death in twenty hours. A second rabbit was inoculated with the blood of the first, diluted to $\frac{1}{50}$, and died in twenty-four hours. A third rabbit was inoculated with the blood of the second diluted to $\frac{1}{1000}$, and died in twenty-three hours. A fourth animal, inoculated with the blood of the third, diluted to $\frac{1}{1000000}$, died in fifty-two hours; while the fifth, inoculated with a dilution of $\frac{1}{10000000000}$, became ill, but finally recovered.

In cases of *septicæmia*, therefore, the *Bacteria* really multiply in the circulation during life; and the small quantity of infectious blood necessary to produce the disease is explained by their singular activity of reproduction.

These experiments certainly bring the study of morbid contagion into very close relationship with that of putrefaction and fermentation; and there is no doubt that the analogies between them become more distinct and suggestive at every step of the investigation. It only remains to show that the same results will apply to diseases of more regular type and more familiar occurrence.

If we were to choose any single morbid affection as a fair representative of the whole class of contagious disorders, I suppose small-pox would be the one selected. Its virulence, the certainty of its communication, the abundance of infectious matter generated, the regularity of its symptoms, and the definite periods of its incubation and development, all make it, so to speak, a kind of exponent of the essential qualities of infectious disease. Besides this, its singular relations to vaccine give it a peculiar interest; and the vaccine affection also, though milder in its symptoms, is hardly less marked as a contagion than small-pox itself. Conclusions derived from experiments with either must be of great value in regard to the study of contagion as a whole.

The first definite experiments in regard to the contagion of vaccine we owe, I think, to Chauveau. He endeavoured to ascertain whether the contagious principle of vaccine lymph is in its liquid or in its solid portions. For this purpose he treated vaccine lymph by the process of diffusion. The result showed that the contagious property of the lymph does not reside in its liquid part, but in its solid corpuscles and granulations. The liquid withdrawn by diffusion, though always found to contain abundance of albuminous matter in solution, failed when used for vaccination; while that containing the solid granules possessed its normal activity, and succeeded as fully as the fresh lymph. The results of these diffusion experiments were confirmed by those of Dr. Burdon-Sanderson performed subsequently.

Chauveau also adopted a second plan for investigating the same point, namely, that by dilution. The significance of this test depends on the following consideration: If the real vaccine virus be a fluid, it is of course uniformly distributed through all parts of the lymph; and if this lymph be diluted to any extent, the fluid virus will still be equally disseminated throughout the whole. When the dilution becomes so great as to extinguish the activity of the virus, this activity ought to diminish and disappear at the same time uniformly through all parts of the liquid. On the other hand, if the contagious principle reside in the solid particles, each one of which is capable of reproducing its kind, these particles will only be separated from each other by the dilution, and made less likely to be taken up in the drop used for vaccination. But, if one of them should be so taken up, it would still produce its full effect. In this case, the number of successful vaccinations would diminish in proportion to the dilution, and the number of failures would increase. But every vaccination which failed would fail completely, and every one which succeeded would produce a normal result.

Chauveau's experiments showed that the latter supposition was correct. Vaccine lymph might be diluted with from two to eighteen times its weight of water without sensibly losing in efficacy; and in one case the experimenter obtained a single pustule from a number of vaccinations made with lymph diluted to $\frac{1}{150}$. He obtained, however, the most remarkable results with the lymph of sheep-pox, upon which he experimented largely. He inoculated the same animal, by twenty-one punctures, with pock-lymph diluted to $\frac{1}{500}$; and of these twenty-one inoculations eight failed, while thirteen gave origin to full-sized pustules. He then diluted the pock-lymph at once to $\frac{1}{10000}$; and with this diluted lymph, out of twenty inoculations, he obtained only a single pustule, but that pustule presented its normal features, and went through the usual stages of development.

The active properties of the lymph of vaccine and variola, therefore, do not reside in its liquid ingredients, but in its solid corpuscles. These corpuscles, which were already observed by Chauveau and Burdon-Sanderson, have been recently examined and described with great care by Dr. Cohn. This observer adopted every precaution against the introduction of foreign elements into the lymph. Some children with healthy vaccine vesicles were brought to the Botanical Institute, the vesicles opened with a new, unused lancet, the lymph taken up by aspiration in a recently-heated capillary glass tube, dropped upon a microscope-slide, and fitted with a glass cover, both the slide and cover having just been thoroughly cleansed with ammonia and boiling water. The edges of the cover were then lacquered down to exclude the air, and the lymph-corpuscles examined at successive intervals of time.

According to Dr. Cohn's observations, these corpuscles are single cells of a spherical form, not more than $\frac{1}{25000}$ of an inch in diameter. They belong to the genus *Micrococcus*, and those of the vaccine lymph are designated by the name of *Micrococcus vaccinæ*. They increase in numbers if kept at the temperature of the living body, forming chains and groups of associated articulations. Dr. Cohn finds similar bodies in the fluid of small-pox vesicles, identical in size and appearance with those of the vaccine lymph. "We must, therefore," he says, "for the present regard the pock-lymph corpuscles as living and independent organisms, belonging to the smallest and simplest of all living things, which multiply, without formation of mycelium, by cell-division alone, and perhaps also by the production of resting spores."

Finally, another kind of micrococcus has been described by Dr. Oertel, of Vienna, and by Professor Ebert, of Zurich, as constantly present in cases of diphtheria; and both observers have found that its inoculation in different parts of the body in healthy animals produces a diphtheritic malady, having its starting point at the place of inoculation.

The contributions to medical literature on this subject have increased of late with unusual rapidity. Since the beginning of 1870 more than two hundred distinct publications have made their appearance, either in the medical journals, or as separate volumes, on septicæmia and diphtheria, on micrococcus and bacteria, the ferment corpuscles, fermentation and putrefaction, their relation to contagion and infection, and kindred topics. Many of these essays are extremely important, others of more or less doubtful value. I have not attempted to notice them all, but only those which seem to have really established some new facts relating to the origin and propagation of disease. Should the discoveries of the next ten years continue to lead in the direction now indicated, it will illustrate more fully than ever the intimate relation which exists between all the branches of medicine and natural science; for it will show how large a part of human pathology is connected with the general physiology of vegetative life.

In connection with this subject a considerable degree of interest attaches to the ingenious experiments of Professor Tyndall on the dust-particles suspended in the atmosphere. The fact that the atmosphere is almost never free from floating molecules, diffused in greater or less abundance by the air-currents, has for a long time attracted attention; and it is a common observation that these dust-particles, even when invisible by diffused daylight, may at once be rendered evident by admitting a sunbeam into a darkened apartment. The minute particles then reflect the light, and become distinctly visible in the track of the beam by contrast with the surrounding non-illuminated space. Professor Tyndall, by passing the electric beam through a closed glass tube, has shown that the atmospheric air, however transparent it may appear to ordinary vision, is never so free from suspended particles that it will not betray their presence, under such circumstances, by a luminous track passing lengthwise through the tube. In following out these investigations, he arrived at two rather unexpected and somewhat important results.

The first was that the solid corpuscles in suspension in the atmosphere are to a very great extent of organic origin. As the dust which settles upon our shelves and mouldings, when collected and examined, was known to be largely composed of mineral particles, it was naturally thought that the floating impurities of the air were probably of a similar character. But when Professor Tyndall allowed the illuminated electric beam to pass directly over the flame of a spirit-lamp, he found that a perfectly dark space was cut out of the beam—wreaths of darkness rising upward from the flame and taking the place, at that point, of the luminous particles. A hydrogen flame, a red-hot poker, or a bundle of incandescent platinum wires, placed in a similar position, produced the same effect. That is, the floating molecules of the air, which have the power of dispersing the light of the electric beam, instead of being rendered incandescent and more luminous than before by a high temperature, are destroyed by it and resolved into transparent vapours. They are therefore combustible and organic.

This fact is of great importance, because it gives us our first definite knowledge with regard to the nature of the greater part of the atmospheric dust. If this be really the channel by which germs of disease are disseminated in the form of distinct corpuscles, we shall never be fully satisfied until we have been able to examine and recognise them, so as to place the fact beyond a doubt. But thus far it has been found exceedingly difficult to capture and place under the microscope the minute ingredients of the atmospheric impurities. This has, it is true, been accomplished for a very few of the simpler and well-known fungus germs; but as for the larger portion of the floating particles which a sunbeam brings into view, our knowledge has heretofore been limited to the mere fact of their existence. It is therefore a great step to learn that, whatever may be their remaining characters, they are, at all events, of organic origin. The minute size of these bodies, and especially their lightness, no doubt explain fully the persistence with which they are raised and disseminated by the gentlest air-currents, while the heavier particles of a mineral nature are more readily deposited in the form of dust upon all inclined and horizontal surfaces.

The second fact brought out by the observations of Professor Tyndall is the extreme difficulty of excluding from the air all of its finer dust-particles, so as to obtain it absolutely free from suspended matter. The electric beam, passing through the glass tube before spoken of, was used by the experimenter as a test for the presence of solid impurities in the air contained in the tube. As the beam is, of course, invisible by itself, and becomes perceptible to the eye only by meeting with bodies capable of reflecting its light, any luminosity in its track through the tube would indicate the existence of floating particles in the contained air. It was found by this test that, contrary to expectation, air which had been passed in succession through tubes containing fragments of glass wetted with concentrated sulphuric acid and with a solution of caustic potash immediately before its admission to the tube still contained similar impurities. Even when it had been allowed to bubble through the liquid sulphuric acid and caustic potash, the electric beam still revealed the presence of suspended matter. Either the contact of these liquids could not be made sufficiently complete with all parts of the air passing through them, or for some other reason they failed to purify it entirely of its organic ingredients.

But a burning temperature succeeded in accomplishing the object. A platinum tube, containing a roll of platinum gauze, was placed in a small gas-furnace, and heated to incandescence. The air was slowly drawn through this apparatus, and then, when admitted into the glass experimental tube, was found to be absolutely free from suspended material. The electric beam passed through it, from end to end, without exhibiting any luminosity; the interior of the tube being perfectly dark, while outside of it the track of the beam was lighted up by floating dust-particles, as before. A tube filled with air in this condition was said by Professor Tyndall to be optically empty; that is, it contained only the transparent gases of the atmosphere, without any admixture of corpuscles capable of reflecting light.

The air may also be freed from its suspended impurities by filtration through cotton-wool. A quantity of this substance was packed rather tightly in a glass tube, so as to form a thick, porous plug. The air, drawn through this tube into the experimental receiver, showed itself to be non-luminous, and consequently pure. This property of cotton-wool has been often utilised in experiments on the necessary conditions of organic development, and it is found that air thus thoroughly filtered does not carry with it any germs capable of producing infusorial or vegetative life.

Finally, Professor Tyndall also demonstrated that air which has once passed through the deeper portion of the respiratory passages has undergone a similar filtration. If the expired breath be made to traverse a luminous electric beam, it at first produces upon it no visible effect. But towards the end of the expiration it makes itself evident by a diminution in the amount of dispersed light, and at last extinguishes completely the luminosity of the beam, cutting out at the point of contact a perfectly dark space. Precisely by what mechanism this filtration is accomplished it is not easy to say, since the smallest of the pulmonary passages in the human lung have a diameter of not less than one-fifth of a millimetre; but there can be little doubt, in point of fact, that by the time the air reaches the ultimate divisions of the respiratory cavities it is thoroughly freed from the ordinary suspended matter which it contained on entering the trachea.

INSECT CONTRIBUTIONS TO PHARMACY.

By P. L. Simmonds.

ALTHOUGH the animal contributions to medicine are not very numerous, yet there are some few that deserve notice, and about which it may be well to gather together a few facts. Passing over leeches (not an insect), which I have treated of under their commercial aspects in another quarter,* I propose to furnish a few details which may prove interesting, showing our indebtedness to the insect world.

Insects are not such trivial objects or so despicable as it pleases many to consider them: even in pharmacy their importance is appreciated. Having clothed large portions of the human race, and this clothing being gaily coloured and decorated with the tints of the Cochineal or Kermes Coccus, other insects furnish galls to contribute to the facilities of expressing our thoughts. The bee lights up our houses with its wax, and with its honey furnishes our tables with a luscious luxury; and when the intemperate enjoyment of this or other food produces repletion and inflammation, another insect is offered to us in the blister beetle to cool our fever and restore us to health. Nor are the uses of insects confined to these few instances; perhaps the indirect benefits we derive from them are more substantial than those which are more obvious. Yet these necessarily involve the reflection of how many thousands of our fellow creatures are daily occupied in, and derive their whole means of living from, the cultivation and produce and the manufacture of the products of these creatures; and who can say that an insect may not be discovered which shall surpass all yet known in conferring benefit on the human race?

---

* *Pharmaceutical Journal.*

The Coleoptera, Hymenoptera, and Hemiptera do furnish some recognised medicinal products, whilst there are other curious facts floating about as to the supposed properties of other insects on the human frame, which are entertained or are current in different countries and among various people which may be thrown together.

The principal medicinal insect of the present day is the vesicatory beetle, of which several species are employed externally for blistering purposes, and occasionally prescribed internally. The remedial as well as the poisonous qualities of the cantharides were well known to the ancients. Hippocrates prescribed them internally in dropsy, jaundice, and amenorrhœa, and Galen held the opinion that the virus existed only in the body of the insect, and that the head, feet, and wing-coverts contained its antidote. The ancient physicians attributed to the Carabidæ qualities scarcely inferior to those of the Cantharides.

Mr. Cooke, in a series of papers published in the *Pharmaceutical Journal* during the years 1871, 1872, gave a very full and detailed description of the different vesicating insects employed, divided into three groups—the Mylabridæ, the Cantharidæ, and the Meloeidæ.

The import of cantharides into this country varies considerably. In 1849 we received 12,370 lbs.; in 1850, 19,474 lbs.; in 1855, 21,513 lbs.; in 1856, 35,922 lbs.; in 1857, 23,670 lbs.

The imports are not now shown in the Board of Trade returns, but appended are the latest figures I am able to give:—

Years	Weight	Value
	lbs.	£
1859	37,578	5,409
1867	18,845	1,988
1868	12,058	1,203
1869	14,785	2,054
1870	16,251	3,472

These insects are so light that fifty of them will scarcely weigh a drachm, and yet in some years as much as 12 tons of them have been shipped from the island of Sicily alone.

The various preparations of cantharides recognised in the Pharmacopœia are tincture, vinegar, blistering liquid, blistering paper, plaster of cantharides, ointment, and warm plaster.

Cantharides, unless administered with care, are certainly poisonous taken internally. In 1698 Dr. Greenfield, a medical practitioner in London, was sent to Newgate for administering them, although subsequently released. He, however, published a work which convinced his accusers of the benefit to be derived from them in cases of strangury, suppression of urine, and other diseases of the bladder.

Young cantharides, it has been found, do not possess the epispastic property, and in medium-sized insects it is equally wanting. Cantharidine appears not to be developed until the complete maturity of the insect. Those, therefore, only should be chosen which have attained their full growth.

The amount of cantharidine which should be contained in fair European cantharides ought not to be less than two to three parts per 1,000: the Indian insects are twice as powerful, and yield 1·78 times more cantharidine than the best samples of the European insect.

The Melocs, or oil beetles, are occasionally employed in the place of cantharides, both in pharmacy and veterinary medicine. They used to be employed for making an epispastic pomade called "ointment of scarabeus." At the commencement of the century they had a reputation as a cure of hydrophobia, and were also esteemed diuretic and considered an infallible remedy for rheumatism.

Other coleopterous insects are endowed with inflammatory or blistering properties, such, for instance, as the golden beetle (*Cetonia aurata*), which was employed in the time of Pliny, and the *Coccinella*, or ladybirds, which, when captured, secrete from their legs an acrid yellow fluid of a disagreeable odour. For this cause, placed alive in a hollow tooth, they are believed to cure the toothache. The *Scarabeus saponarius* is used in Senegal by the natives instead of soap.

The kermes insect, of which Dr. Planchon has given us an interesting monograph (*Le Kermes du Chêne au point de vue zoologique, commercial et pharmaceutique*, Paris, 1864), has an interest for the chemist, although not now employed in medicine. Its history may be classed under two periods. In the first, from the time of Dioscorides to that of Mesué, it was only employed for its astringent and slightly bitter properties. In the second period it formed the base of the opiate confection alkermes, so long celebrated for its cordial and comforting properties. The ancients never administered kermes internally: they contented themselves with applying it to recent wounds, and those which touched the nerves, or for injecting into bloodshot eyes. The preparations were very simple; probably, for sores, a kind of paste of kermes mixed with vinegar or oxymel, and diluted with water for the eye lotions. All this became changed in the ninth century, when its astringent properties were entirely overlooked, and its comfortable properties when taken internally lauded by Mesué; and kermes became almost lost or absorbed in the famous electuary of which it was the base.

Here is the primitive formula of this famous confection, as given by Mesué, "Accipe setam tinctam ex Chermes circiter lib. j. proprié cujus tincturam non præterit spatium extensum: et submerge eam in succo pomorum dulcium et aquæ rosæ àna lib. j et s, et dimitte die una. Deinde fac modicum bullire donec aqua rubeat. Deinde extrahe ab eâ setam, et exprime eam, et pone in ipsa sacchari tabarzeth drachm. cl. et coque usquedum habeat spissitudinem mellis et remove ab igne: et projice in eo calido ambræ crudæ minutim incisæ drachm. iiij, et dimitte in eo liquefieri. Deinde injice super ipsum pulverem harum rerum. Accipe ligni aloës crudi et darseni ana drach. vj, lapidis lazuli loti et præparati drach. ij, auri boni drach. j, musci boni drach. j, tertiam. Confice, et sit dosis ab aur. j, ad ij et s. Est et bonum et expertum."

What were the virtues attributed to each of these medicaments associated with the principal ingredient, and why were they added? To answer this we must fall back to the days when multiplied preparations and complicated formulæ were current in order to mystify and enhance the value of the prescriptions. In default of more ancient explanations, we may refer to the Pharmacopœia of Bauderon, revised and enlarged by Jean Verny (Lyons, 1672, p. 321), where, at the end of Mesué's prescription, the following explanations are added:—"The virtues of the base are enhanced by the pearls, amber, musk, and gold. The lapis lazuli by calcination and washing loses its emetic and acrimonious effect, so that a small quantity will not stir up the humours nor convert them into its nature, but rather lessen the melancholy vapours which ascend from the spleen to the heart and brain. The aloes wood, cinnamon, and rose water are added to strengthen the viscera by their slight astringency, like the apple juice for correcting the sharpness and dryness of the issues, the sugar to render the action and taste better and to preserve its keeping."

This preparation of Mesué attained an immense success. Nearly all the medical men, and especially the School of Montpellier, admitted its value, and thus added to its reputation.

By the sixteenth century its usage had become greatly extended; it was not only in the cases specified by Mesué that it was employed with confidence, but also in other grave and serious maladies, such as apoplexy, paralysis, &c. France and Italy could not find a better preventative against miscarriage than kermes liquor with mastic and frankincense; and in cases of difficult confinements the midwives of Nimes and Montpellier had no more efficacious remedy for relieving labour pains and aiding parturition than a dose of the alkermes confection. The School of Medicine of Montpellier, adopting its use, endeavoured to render it more efficacious. Jean Falco, Guilliame Rondelet, Joubert, and Dortoman, four famous and celebrated royal professors of this University of Medicine, made various changes in the prescription. For instance, instead of tinging the raw silk with the kermes alone, they thought it preferable to add it to the apple juice and rose water; or the cocoon, purged of all its impurities, was steeped twenty-four hours in one pound of fresh syrup of kermes with two pounds of sugar, when the cordial properties would be found greater.

In the second place, Mesué was satisfied to wash the lapis lazuli, that is to say, first grinding it or pounding it, and then washing it in soft water, changing the water repeatedly and washing it ten times in rose water. The new physicians advised that the mineral be first calcined before washing, so that all laxative properties be lost, and there should remain nothing but what would rejoice and comfort the heart, an effect which would result from the abatement of melancholy vapours. Finally, the quantity of amber was lessened, so that its composition might be less expensive; but the proportion of musk was nearly doubled, in order that it might not be the less perfumed.

The seventeenth century changed nothing of the prescription of the Montpellier College, but as science and knowledge progressed, an account had to be given of the constituent elements of a preparation. We find the alkermes confection began to be modified in its various proportions. The "Universal Pharmacopœia" of Lémery, published in 1748, gave a new, improved formula for the confection, in which neither silk, rose water, apple juice, gold, pearls, or lapis lazuli appear:—

Syrupi Kermesini optimi recenter parati et ad mellis consistentiam cocti, libr. unam et semis
Santali citrini et cinnamoni, ana scrup. j
Ambræ grisæ, drachm. j
Moschi, drachm. semis
Oleorum macis et caryophyllorum, ana gutt. vj
Fiat confectio S. A.

From this modified confection, there was but a small stride to the simple and pure principal substance—the syrup of kermes. This step was soon made, and the famous electuary no longer appears in the annals of the Materia Medica. The syrup of kermes has always been employed by chemists for the same use as the popular confection. Nissole tells us how it was prepared: —The insects (or scarlet grains) were pounded in a marble mortar with a wooden pestle, and, when well bruised, the pulp was turned out with a wooden spatula on to a horsehair sieve, and when the fluid had filtered through, it was mixed with an equal weight of pounded sugar, and kept in porcelain vessels for use, being occasionally well stirred up. The tincture of cochineal now in use enlightens us as to the true property of the kermes syrup, the two insects having like properties.

The Arabs and Tartars attribute a good many medicinal properties to kermes: among others they consider it as a remedy for bad eyes and headaches. At Montpellier they still make a syrup with the red juice expressed from the recently-gathered insect, which has an aphrodisiac reputation. It enters also into some pharmaceutical preparations and liqueurs to which it gives its name. In Italy, at Rome, Naples, Milan, and especially at Florence, they prepare with it a cordial known as elixir of alkermes, of a delicate, agreeable, and fine flavour, which is much esteemed. The nuns of the Convent of St. Marie Nouvelle of Florence obtain a very high price for their alkermes liqueur.

It is said to be made with bay leaves, mace, nutmegs, cinnamon, cloves, brandy, syrup of kermes, and orange-flower water. The first six ingredients are distilled, and the last two are employed to give flavour.

Tincture of cochineal now takes the place of kermes in British medicine, but its commercial value is more for a dye product than use in pharmacy, and even in this direction the aniline colours have largely interfered with its importance.

Galls, from their astringency, may be useful, as Payen tells us, in medicine, in cases of passive hæmorrhages and in mucous fluxes unaccompanied by irritation. Mixed with other indigenous bitters they have occasionally replaced quinine. Besides their use in the arts and manufactures, galls have come to be used in brewing, since it is found that 15 ounces of tannin are equal to 500 ounces of the best hops for clearing and preserving the wort of beer. The varieties of galls are very numerous; a good description of the principal kinds, with figures, will be found in the first volume of my "Technologist," in a paper entitled "Notes on Galls" by Mr. M. C. Cooke, and in the second volume of the same publication, p. 234, are some original analyses made for me, showing the amount of tannin in different kinds of galls and tanning barks. Gallic and pyrogallic acid are indispensable to photographers. In China, with a medical reputation in toothache and the itch, galls form an ingredient in a celebrated imperial electuary much esteemed, and which can only be obtained through the Court influence.

Dr. Hollis read a paper on oak galls before the Linnean Society early this year, in which he divided them into two classes—the unilocular, or one-celled, which includes the woody marbled oak galls, the ligneous galls of Reaumur, and the currant galls; and the multilocular, or many-celled, including the spongy oak apple and the oak spangles of the leaves. Oak galls vary in size from that of a pea to a nutmeg. They contain large but variable proportions of tannic and gallic acid, on which their uses in the arts and medicine depend. Under the name of "kadukai," galls found on the leaves of *Terminalia Chebula* have a medicinal repute in India. The dried fruit of this tree, the *myrobalans* of commerce, are often improperly termed galls.

Oak galls are abundant in Asia Minor, Mesopotamia, Syria and Persia. There are three principal kinds classified, the white, green and blue. The white are chiefly used by the leather manufacturers; the green and the black by dyers and for ink-making. They are chiefly produced on the mountains in the vicinity of Moussul on the banks of the Tigris.

The real Moussul galls are the best of any, but all that are gathered in the surrounding country are sold under this name. The annual gathering is calculated to be from 7,000 to 10,000 cantars (1,575 to 2,250 tons), which includes small parcels from the Singar Mountains and Giaour Dagh or Kells.

The consumption in Aleppo is under 100 tons a year, the rest being sent to Europe. The tithe paid on galls in Aleppo in 1862 was 3,409*l*. The best blue galls are procured in the mountains about Jezireh and Bohtan, whilst slightly inferior qualities are obtained in the country about Diarbekr and Saert. The great importance of galls will be understood from the fact that we imported in 1873:—

	Weight cwts.	Value £
From Persia	3,500	10,597
From Turkey	3,420	10,705
	6,920	21,302

The Chinese use powdered galls medicinally in cases of dysentery, chronic diarrhœa, nocturnal perspirations, and seminal weakness. They also apply it externally in cases of certain eruptions and cutaneous diseases. The galls used are similar to those of European commerce, but there are several varieties met with, some light, round, and of a pale yellow, similar to those found on *Quercus Robur*; others found on *Q. castaneifolia*, which are heavy, greyish black, and rough or bristly on the outside. The curious shaped Chinese galls found on the *Rhus* do not seem to be used medicinally.

Of the products of the bee—clarified honey and wax—it is not necessary to speak: these are too well known to need description here, but there is an insect furnishing a beautiful white wax in China which we must not pass over. The wax as met with in commerce resembles spermaceti, is nearly pure, and melts at 88° C. It dissolves easily in naphtha, but less readily in ether than alcohol. It contains 84 per cent. of carbon, 12 of hydrogen, and 4 of oxygen. It is employed for the same uses as beeswax, its high point of fusion rendering it suitable for making candles and other preparations into which beeswax enters.

The pela or white insect wax is employed medicinally by the Chinese both internally and externally, and has completely replaced beeswax as a cerate. It is considered to renovate impoverished blood, ease pains, and re-establish strength.

The *Coccus maniparus* contributes to the production of manna on the tamarik.

A pharmaceutical substance known as "*Trehala*" or tricula, described in the Persian Pharmacopœia as "nest sugar," is almost a species of manna, like that found in Australia called "lerp." The insect producing it has been named by M. Chevrolatt *Larinus subrugosus*, and it is found on the branches of an Echinops in the desert between Aleppo and Bagdad. In Turkey and Syria a decoction is made by breaking up about an ounce of this saccharine substance, placing it in a pint and a half of boiling water, and stirring it for a quarter of an hour. This preparation is given to persons in affections of the respiratory organs, particularly those who are attacked with bronchitis. The trehala is also employed as food; the use of it is as universal in the East as that of salep and tapioca in France. Its composition is about 66·54 starch, 4·66 of a kind of gum, and 28·80 of sugar mixed with a small quantity of some bitter principle and mineral salts. A closely allied insect to the foregoing, *L. odontalgicus*, has obtained a reputation as an odontalgic. Some species of Carabidæ and Chrysomelidæ have been mentioned as possessing similar properties.

Another insect product which may be here mentioned is the lerp, a saccharine secretion found on the leaves of the Eucalypti in many parts of Australia by insects resembling aphides. It is composed of pure starch, which changes into sugar by the action of the saliva.

In Chinese pharmacy a few other insects are employed. Thus a species of green Mantis and its nests are used in cases of incontinence of urine and spermatorrhœa. The cricket forms the basis of a medicine to throw out splinters which have entered into the skin. It is considered anti-hydrophic. Three or four such crickets are administered in a spoonful of Chinese rice wine. The drone or wasp is used in cases of bites by spiders, ulcers, and leucorrhœa. It is said, also, to cure toothache. The moth, the chrysalis, cocoon, and even the silk of the silk-worm have reputed medicinal properties. The bodies of grass-hoppers roasted and made into pills are considered anthelmintic, and are given to infants as a febrifuge. They are also administered as remedies for sterility, impotence, menstrual disorders, and lumbago. But their principal repute is as a remedy in hydrophobia. The *Scolopendra morsitans* is employed as an anthelmintic, and steeped in samchou or rice spirit it is deemed an infallible vermifuge. A tincture of scorpions is also celebrated and much vaunted for its miraculous effects in various diseases.

A sour liquor which ants eject when irritated, termed formic acid, was formerly obtained by bruising the ants and distilling them with water, when a peculiar volatile acid passed over. This acid decomposes the salts of a few metals. Silver is readily thrown out in the state of bright metal on glass surfaces by means of formic acid. When dissolved in water this acid serves the purpose of vinegar in Norway, where the ants are collected and steeped in boiling water, and thus is formed dilute formic acid.

The fragrant Dekamalli resin of India is said to be formed like lac by the punctures of insects on the branches of *Gardenia lucida*. It is much used in hospitals as a dressing for slight wounds or putrid sores, keeping away flies on account of its strong aroma. It is also used by native farriers powdered or made into an ointment with country calomel and ghee, or fluid butter. Capt. Owen ("Narrative of Voyages on Eastern Coast of Africa," ii., p. 238), states that a kind of paste made from the cockroach (*Blatta orientalis*), administered internally, was found one of the most powerful anti-spasmodics known, and particularly useful when diluted with water in the case of lock-jaw. In Turkey *Blaps sulcata* is believed to act as an antidote in the ear-ache and the sting of the scorpion.

Here, then, are a few instances of insects used in medicine and pharmacy at the present day. The enumeration might probably be extended.

SWEDENBORG AS A CHEMIST.

FOR a mind like Swedenborg's, always seeking to grasp the principle of things, there would be something peculiarly fascinating in the attempt to generalise and educe theories from the vast experimental field offered by chemistry and physics. When we consider the great strides which these sciences have taken in our own and in immediately precedent times, we are tempted to speculate on the possibility of a complete generalisation being effected by a modern intellect which, possessing the universality of conception attributed to Swedenborg, would also be guided and controlled by the more general and more exact knowledge of experimental law, and whose work would be extended and enlarged by the possibility of a more comprehensive plan. To a certain extent Swedenborg was compelled to build his house on a foundation of sand. Although experimental work was very largely pursued in his time, these experiments were not carried out with the minute and consistent accuracy which is absolutely necessary if we wish to progress with safety along the path of scientific inquiry, and which has been the general characteristic of modern chemical work. The details necessary for a perfect and self-sustaining theory were wanting, and Swedenborg's generalisations suffered accordingly. The enormous mass of analytical evidence which the labours of modern analysts offer to the generaliser were then represented by a very bare, and oftentime inaccurate, list of experimental facts. But Swedenborg must have had a marvellous faith in the scientific knowledge of his time, or, in speaking of the progress achieved, he would hardly have regarded the light shed on physics during the century preceding him to have "reached a meridian degree of brightness," nor would he have accepted unattested the "thousands of guides" towards penetrating the secrets of chemistry of which he speaks. Although apparently accepting the lights of his time unquestioned, Swedenborg did not put his theory forward as one which was completely established at all points, but he rather advanced it as an attempt towards a mathematical explanation of chemical and physical facts.

Unless we make ourselves acquainted with the state of chemical knowledge at the time Swedenborg advanced his theories it will be almost impossible to give impartial consideration to his views. At the time we speak of, in the beginning of the eighteenth century, chemistry was just emerging from the mysterious and unintelligible dominion of the Alchemists, and was beginning to be represented by workers more or less after the type of the modern school. There was not a sufficiently comprehensive theory to afford a definite and uniform nomenclature, indeed it might almost be said that there was not sufficient experimental knowledge to afford a theory that would suffice for the purpose. The ancient doctrine of the four elements, earth, air, fire and water, was hopelessly and inextricably muddled with the three universal principles of the alchemists—salt, sulphur, and mercury. By the first, *earth* was considered and defined as the most fixed, ultimate form of matter, by itself dry, dead, and white, and composed of particles of inconceivable minuteness. It formed, as it were, the backbone of all other bodies, which were produced from it by combination with the other elements. *Water* was intermediate between the dense and subtle, between earth and air. The elemental was different to ordinary water, which was a compound. *Air* was the subtle element, the cause of changes, and the medium by which the fire of the sun was conveyed to material objects. *Fire* was the most subtle element, and in some senses was regarded as almost spiritual or divine; it originated in the sun. The ancients did not confound their ideal elements with ordinary earth, water, air and fire, which they regarded very properly as compound. By the alchemical theory *salt* was supposed to be a combination of earth, water and fire, and to be the principle which gave the saline character to all known salts; *mercury* and *sulphur* were also peculiar combinations of the ancient elements. All known metals and other bodies were supposed to be composed by the union of these three in various manners. To suppose that transmutation was possible it was only necessary, on this theory, to suppose it possible to modify the proportions in which the elements were present in a given metal so as to conform with the proportions of the desired metal. Such were the conflicting views on which Swedenborg endeavoured to plant a harmonious and consistent theory.

Swedenborg's chemical theory was an attempt to give a mathematical origin to matter, and differed from the ancient theory of atoms, which regarded all matter as alike, varied properties being attributed to varied forms; it differed also from the modern theory of atoms, wherein the atoms differ from one another, and constitute the various elements. Swedenborg's theory presents essential differences from the views quoted above. He does not regard matter as consisting of simple and homogeneous particles or atoms, whether general or elemental, but he attributes the qualities of substances to forms and motions, of a highly complicated character, and which differ from one another by orderly series and degrees. Swedenborg's elementary particle is composed of "active finites," possessing an innate tendency to motion, and which communicate a collective tendency to motion of the compound particle or element. Geometrical form is another attribute of these particles. In the more subtle elements, the motion of the "active finites" has most influence on the character of the matter under consideration, but in denser forms of matter these motions are suppressed, and the secondary, mathematical or geometrical, qualities preponderate, regulating the form of the particles. Chemical action of all kinds, and physical phenomena, including crystallisation, solution, malleability, &c., are explained as the necessary result of the differing shapes of particles which have lost their original mobility.

Swedenborg's natural point is identical with the geometrical point; it is pure and total motion. The *active finite* is produced from the natural points which finite and limit each other. The active finite being derived from pure motion retains a tendency to motion. The second finite is produced in a similar manner from the first, the third from the second, and so on up to the fifth. An element consists of spherical particles, containing actives in the interior and passives on the surface. Swedenborg has five of these elements; the first is the cause of gravity, the second is the magnetic element, the third is the ether, the fourth is the air, and the fifth is the aqueous vapour. Like a miniature sun or earth, each particle has poles, an equator, an ecliptic, and meridians. The spiral motion of the point causes the generation of the first finite, from which is produced the second finite; the first elementary particle of the solar vortex is produced from the passives which form its crust and the actives which fill its interior, and from this all other matter was derived. The sun consisted interiorly of the first and second finites in a state of activity, and exteriorly of finites reduced to a passive state. Near the sun the first elementary particles became greatly compressed, and third finites were generated, which formed a crust of the second elementary or magnetic particle, extending as a boundary of *passives* round the sun, and continuing to gyrate round its more active centre. Centrifugal force caused this crust to alternate, and to at length burst, its fragments forming planets and satellites of various dimensions consisting of globes of the fourth finites containing actives in the centre. In its earlier period the earth, for instance, experienced an innumerable variety of changes; its first revolutions round the sun being far more rapid than afterwards. As the distance from the sun increased the diminution in the pressure of the solar vortex allowed the finites on the earth's surface to become active, constituting the third element, or ether. By further diminution in pressure the air and other distinctive kinds of matter were produced. Water is produced by the compression of air, and its vapour forms the last of the atmospheres surrounding the earth, or rather of the atmospheres that may be formed while the earth occupies its present position in the solar vortex. Solid matter was produced by the great pressure of the water causing the disruption of the aqueous particles in the lowest part; the globular arrangement of the particles was destroyed, and the latter fell into the cubical interstices between the remaining aqueous particles. Similar causes produced a similar result with the particles of this the fifth dimension, which were thus reduced to those of the fourth dimension. The formation of the different kinds of salts, stones, and rocks was thus due to the great variety in composition, specific gravity, and qualities of the substances which were thus successively produced one within the pores of the other.

The particulars given will serve as a rough outline of Swedenborg's more general theory as bearing on chemistry, which amounts of course to a theory of creation wherein all the varied properties of things are traced to mathematical and geometrical motion and form. Herein lies a vast difference between Swedenborg's theory of matter and that of modern philosophers, who consider matter to have been instantaneously formed out of nothing, and at once in all its various kinds. We must confess that we are inclined to regard the theory advanced by Swedenborg as to the creation of matter with at least as much favour as the modern clumsy idea. There is certainly a very graduated relationship between the various imponderable forces and the ponderables. We have every step in the series. Magnetism, electricity, light, and heat may, or may not, each and all be forms of motion: if they are it is at once clear that our grosser matter is capable of motion and disturbances which are at variance with the ordinary conception of its solidity and immobility; if the imponderable forces are something more than motion, if they consist of elementary particles related to the particles of our grosser elements, then a similar conclusion must be come to regarding the permeability and mobility of the gross matter of our earth. And does not the fact of the readiness with which matter yields to the forces favour the idea put forward by Swedenborg of the almost exact relationship between the forces which bind a mass of iron together and those which determine the revolution of the planets around the sun? When we come to details, we fear, however, that Swedenborg's views will not bear the light afforded us by modern scientific work, and therefore we think that the most that can ever be claimed for him is the credit of having conceived a harmonious theory of the evolution of matter which is, at least, less clumsy and less improbable than the ordinary ideas of creation. Perchance it may point the road to a generalisation which shall be less discordant with modern scientific work.

We have already explained the formation of the fifth kind of hard particles, or fifth finites, on the plan conceived by Swedenborg. At the next step we come to water, which occupies the place of the sixth kind of hard particles, and is defined as follows: The particle of water is round: on its surface there are crustals of the fifth kind, whereon are crustals of the fourth kind, and so on to the first kind, and at length mathematical points, or to atoms composed of points. The particles are not only round, but hollow. According to the theory the fluid or natural position of the particles cannot be preserved at the bottom of the sea, owing to the superincumbent weight, and to the deficiency of the subtle matter, so that the spherical particles in part collapse, and it is held that this disintegration or decomposition gives rise to the salts and metals. In consequence of the position of the globules of water, the spaces and interstices are of two sorts, viz., cubes, with hollowed sides and cavo-triangular, and if the particles of water be broken up at the bottom of the sea, or in other words if the crustals of the particles, when in a very quiet state, glide into the interstices of the lower particles, and the spaces, which before were empty, be filled with a new and subtle matter, it is supposed that new particles and shapes of various kinds are thence generated. Accordingly, the particles of salt would have a shape exactly similar to the figures of the spaces of the water; and in perfection would consist of a cube with eight triangles or points. If some of the points are broken off the salt will be less perfect, it will possess so much the less acidity, on account of there being a smaller amount of spicula to produce acidity, so that variety in salts arises. If all the points are removed from the cube the remainder would be but a dead substance without taste or acidity; and would form a particle of some kind of earth. The spicula therefore constitute the acid of the salt, and the cube is the base or earth. If there were only one kind of earth or base and one kind of acid producing by varying proportions the different salts, this theory would appear more plausible. It is curious to note, however, that a theory which is in many respects a wonderfully harmonious production of mental ingenuity should be so ill-adapted to our present knowledge of the elemental constitution of salts, and yet appear to be so very comprehensive when compared with the knowledge of Swedenborg's time. It is one argument the more for a strictly experimental and deductive philosophy. The particle of acid is held to be a regular triangle having four hollow sides and four points, and the different kinds of acids are supposed to be produced by the juxtaposition of one or more of these triangles. Metals are held to be produced by the disintegration of particles in the bowels of the earth, where, being perfectly at rest, and deprived, moreover, of all soft circumambient matter, they are resolved into particles of smaller size, and insinuate themselves into the pores of the larger particles, so that an accession of matter and weight converts what would have been a salt into a metal. Some particulars are given as to the constitution of lead, which are interesting. The lead particles contain globules and cubes—six metallic cubes and twelve globules being ranged around one central globule, the whole affording a particle of lead, which is nearly round, and illustrating the constitution of the denser kinds of matter.

We cannot dip into the mathematical and geometrical evidence offered by Swedenborg in support of his theory, but will content ourselves with having thus given a glimpse of the views he put forward. However visionary his views may be held to be, it is probable they would compare favourably with certain of our contemporaneous 'science.'

MEDICAL PRACTICE IN CHINA AND MONGOLIA.

SOME interesting facts in regard to Celestial medicine may be gathered from a report of the Pekin Hospital drawn up by Dr. John Dudgeon and the Rev. James Gilmour, M.A. That hospital, if we understand correctly, is carried on under the auspices of the London Missionary Society, and the gentlemen we have named are "medical missionaries" in association with that society. Dr. Dudgeon presides over the Peking Hospital and Mr. Gilmour is a missionary among the Mongols.

Among the accidents which were treated at the hospital during 1874 "debt and family jars with mothers-in-law" are assigned as especially prolific causes.

Among the patients whose cases are alluded to are some afflicted with terrors of foxes. These animals are abundant in China, and exercise great influence over the inhabitants. If one be touched or killed, evil is sure to follow; Reynard never bodes good to anyone. The fox, according to the Chinese, is strategetic and full of suspicions; he must therefore be caught homœopathically. A person without settled purposes is said to have fox doubts. The fox cries like a child; his smell is disagreeable; his superior magical or demoniacal power is such that the very evil spirits fear him; he has so quick an ear that he can hear ice freezing, and will put his ear to it to test it before he ventures to cross water upon it; in his interior he has a pearl; and it is by means of this that he exercises his talismanic influence over people and is able to transform himself into a man or woman. Persons under the influence of the fox will clasp their hands, bow the head without intermission, speak when alone, receive people naked, and do a host of things no person would be guilty of in his senses. These, and many other superstitious ideas are entertained by this people regarding the fox.

Dr. Dudgeon reports a case of a man who had had both bones of his leg fractured in the street:—The man hired a cart at once and came to us. The leg was put up in splints and he was removed home at his own desire, having arranged that one or other of the assistants should visit him daily at his home and report. After five days, during which time nothing was heard of him, he returned the splints, saying he was quite well. Chinese politeness forbade him to make any other excuse. The supposition was that some native doctor, perhaps a friend or relative, had recommended to him some celebrated plaster, and had so prevailed over the patient as to induce him to return the splints. This is a common procedure here. We have each year to note cases of this sort.

Small-pox, as is well known, is a great scourge in China. The Emperor, eighteen years of age, was attacked with the "Heavenly Flowers" on December 9, the day of the transit of Venus. Those cognizant of this event considered it very wonderful, and argued that it was natural; that as the natural sun was obscured by a dark spot (the transit of Venus across the sun's disc), so the Emperor—the Son of Heaven being likened to the sun—should have the eruption of small-pox, or, as it was phrased by the *Court Gazette*, "was enjoying the felicity of the heavenly flowers." At one time it was considered so slight that the number of pustules was counted; then it was reported as more severe; now, the case was graver than was desirable should be known—and again, he was convalescent, and honours and emoluments were showered down upon the two medical men and the bannermen on duty in the palace. On December 24, the fifteenth day of the disease, the most extensive offerings were made to the goddess of small-pox, the burning of paper, &c., taking place in front of the South gate of the palace. It is reported that as much as two or three hundred thousand taels were spent in this frivolous and superstitious ceremony. A relapse took place, and on January 6 he was not expected to recover. He sank and died on the 12th. The medical men were stripped of their additional rank and emoluments, and so also were the palace bannermen. A memorial was even presented to have the two medical men more severely punished. They treated their Imperial patient according to the strict rules of their art, and of course could not—dare not—deviate from the beaten track laid down in their most absurd system. Among the shrewder Chinese themselves, it is remarked that the Emperor died by rule or the point of etiquette. Rumours of all kinds were afloat regarding the emperor's illness, but without better evidence than has yet come to our knowledge it would be rash perhaps to deviate from the original and published diagnosis. It was said he had small-pox when a child at Jehol. His illness has at least demonstrated the fallacy of the opinion that only children are subject to it. Regarding the nature of the disease, it may be said, however, that there was much in many of the symptoms to excite suspicion; and the banishment of several eunuchs afterwards, as being accessory to the Emperor's death, lent a colour to these doubts.

The present Emperor of China, it is said, has been vaccinated, and his imperial brother of Japan has followed his example.

Dr. Dudgeon writes warmly of the gratitude of the Chinese for successful medical services. This gratitude has taken a variety of forms. There is the "Thank you," the bow, the salaam, the courtesy, the *kotow*, the determination to spread abroad your fame—the presentation of silk and paper scrolls, and tablets—of handsome wooden tablets. The latter kind of tablets is the recognised public expression of thankfulness, and very flattering to the doctor. By means of these the physician is advertised and his reputation is extended, and as a matter of course his pocket enriched. Getting a tablet put up in China is pretty much like setting up a carriage at home. These tablets are very expensive in many cases, and of course handsome; they are lacquered or handsomely painted, or gilt, or varnished, and they are brought in great state through the principal thoroughfares, with bands of music playing and banners floating in the air, to the hospital, where they are erected under the eaves of the wards, amidst the patients and friends and admiring crowds. When the tablet arrives, the first act is for the patient and his friends, dressed in official robes, to *kotow* to the doctor, the latter facing due south in the principal hall. Some of the native medical men live and become wealthy on the voluntary contributions of their patients. The doctor invites all his patients once each year to a repast, and no one comes empty handed. The same occurs at births, marriages, and deaths, and constitutes a sort of voluntary Friendly Society. The eaves of the various buildings, and in fact, almost every available space in the hospital, is already taken up with tablets. With the exception of the Goddess of Mercy, the hospital can boast of the largest number of tablets in Peking. Those erected by well-known ministers of state, governors, or viceroys of provinces, princes, &c., are especially handsome; these carry great weight in the minds of the people, and have tended much to the fame and stability of the hospital.

A method of weaning children practised by Chinese mothers is perhaps worthy of more extended fame. "At the age of two or three years take three of the fruits of the *Gardenia florida*, and burn them black; add vermilion and a very little calomel; throw in some oil, and then paint over the eyebrows of the child during sleep, and when it awakes it will refuse the breast. If, however, this should prove ineffective, then paint the breast with Indian ink, and the child when it sees it will be afraid and will refuse the breast." An infallible remedy, considering the age at which the weaning takes place.

⁂

One of the most prevalent diseases in Mongolia is itch. The Mongols very seldom change their clothes, and practise the least possible amount of washing, either of their persons or their garments; having a superstitious belief that if they use too much water, after death they will become fishes. In their tents they live so closely huddled up that when one gets itch all soon have it. Travellers and visitors who pass the night in an infected family are pretty sure to catch the disease too, as they have to borrow a garment to serve as a blanket. Everything is in its favour, and it flourishes. Many of the Mongols go on religious pilgrimages, and many of them roam about merely for the pleasure of the thing. These catch the disease and spread it; and as the Mongols know of no effectual cure, the wonder is not that it is so prevalent, but rather that it is not universal. It seems to come and go, to a certain extent, however; and it is no unusual thing to hear a traveller, among his inquiries about the road and places he is to pass, asking "How about the itch over there—is it fierce or is it moderate?" Kerosine oil seems to recommend itself to the Mongols from the easiness of its application and the speediness of its effect.

Rheumatism is also a frequent disease in Mongolia. It is induced by the climate of the country and the manner of life. Some fine morning a man debates with himself whether he will wear his summer coat or his sheepskin. If he thinks it will be a warm day he puts on his summer coat and rides off. Suddenly a cold wind blows, and he must endure the cold till he reaches home again in the evening. Or, perhaps, he is the night watcher of a drove of horses, and, tired out, lies down on the damp ground, and soon feels it cold, even through his sheepskin. Or, perhaps, he has got wet through in a shower, and has to wear his wet clothes till they dry. Or, perhaps, finding his coat too warm, he unbuttons the front and takes out one arm leaving the shoulder exposed.

Even at home in a well-to-do tent it is not much better. In winter there is a fire in the centre; all sit round it, and are warm enough in front but cold at the back; and there is always a current of air coming from the sides of the tent towards the fire. In summer it is even worse. The cow-dung basement round the tent, which was intended to keep out the cold, is now removed, and a clear space of from four to six inches left, through which the four winds blow at their sweet pleasure. During the day it is not so bad, but at night, even in summer, the air is not warm and the tent is never without a cold draught. Add to this fact that the Mongol's blanket is his coat, which, being rather short to cover all his person, is apt to leave the shoulder exposed, or, at least, not well protected, and it is not difficult to understand why almost every man and woman in Mongolia suffers from rheumatism. Not only men and women, but youths even suffer from it, and this is partly to be accounted for by a notion the Mongols have, that it is good for a youth to sleep with insufficient covering. Thus rheumatism runs riot among them, and will do so till they change their mode of life and can be taught to take some care of themselves. Their own faculty have no remedy for this disease. Kneading, as a baker kneads dough, gives a little relief at the time, and the boys and girls are in pretty constant requisition to perform this operation on the backbones and shoulders of the elder members of the family. Old people who have no young folks in their tents manage to knead themselves by means of a stick with a great V-shaped crook. This stick they call the rheumatism curer. Holding it in front, they can knead their own shoulders almost as effectually as by the knuckles of the youngsters.

Mongols themselves remark that they never see Chinamen having themselves kneaded.* Even the Chinamen who travel and trade in Mongolia do not suffer much from rheumatism. Their dress is better adapted for heat and cold, and they are more careful. When the Mongols dress like the Chinese and live in built houses, even though they should be but such poor mud erections as Chinamen put up in Mongolia, we may expect to see a decrease of suffering from this disease. Till some radical change is introduced in dress and tent life, rheumatism must reign. Treating them for it is hopeless. Cure them—carelessness and exposure brings it on again. Of a temporary cure they do not think very highly; and they are ready to be caught by the advertisement of any Chinese quack who professes to give them perpetual immunity from this kind of suffering. I heard of one Chinaman who sold a plaster which had only to be stuck on, and it would of itself find out and travel over all the painful parts till a complete cure was effected. The gullibility of the Mongols may be judged of from the fact that they not only bought the plaster, but actually produced men who had proved its virtue and believed it could perform all that its inventor asserted of it!

Another plaster, talked of in one part of Mongolia, had only to be stuck to the roof of the mouth, and was warranted to preserve all the teeth fresh and free from decay till the latest day of the longest life

Indigestion is very common. The diet is coarse, and without much variety. Even those who have milk are not so well off as might be supposed. Some milk, it is true, is used pretty nearly in its original state, boiled with millet, added to tea, or as cream-cake, which is formed by heating the milk to the boiling point and letting it cool slowly. But when milk becomes a staple article of diet, it is used in the shape of a great many preparations, some of them tough, some of them hard, most of them acid to a degree, and nearly all of them impracticable to a foreigner. It is hard living.

Many people have the idea that mutton is the common food of the Mongols. It is the food they like, but only the richer men among them can afford to have meat frequently. The poorer people sometimes do not taste flesh from one month's end to another. They live on millet boiled in water, with a little milk added if they have it, or, if milk cannot be had, in weak tea. If they get any of the hard, sour, or tough preparations of milk, they soak them in their teacups, and this has some effect in reducing their disagreeableness.

One of the reasons that Mongols have difficulty in getting meat in summer is that there are no shops, and a whole carcase does not keep well in the hot damp weather. Even rich men do not have much flesh meat at this season. It is quite a common thing for a Chinaman to get a great old tough ox, which has done good service in cart and plough for years and years, lead it up to some central place in Mongolia, send round notice of the approaching day of slaughter, kill it, and sell it to the Mongols, who come, like eagles to the carcase, from all the four winds of heaven. The meat is tough, the weight is light, the silver balance is heavy; but notwithstanding all this, by the evening of the day on which the animal is killed, there is not a remnant left. All day long horsemen come in by twos and threes, and depart with small skin bags containing two or three catties of meat. It is like taking coals to Newcastle; but though the Mongols know this, and know in addition the nature and extent of the advantage which the Chinaman takes of them, they have not business tact and energy enough of their own to conduct the selling of a "summer ox."

In winter they fare better as regards butcher meat. When the frost has set in they kill off all the old cows, and ewes, and mares that they think will not be of much use next year; the cold preserves them, and they eat away at it till next spring, taking it in small quantities, and being careful to use up the tripe and blood. I have not myself tasted the mare's flesh, but the Mongols say it is coarse, and many of them, rightly or wrongly, trace to it the origin of their diseases.

Ague is not common, but not altogether unknown. It greatly alarmed a part of a tribe once by spreading itself among them. The lamas did not know what to make of it, and at last concluded it was a contagious disease, introduced into the country by the Mongol soldiers who had gone on government duty into China. The popular account of the visitation proceeds to say that when Mongols got so ill under it as to be delirious they raved in Chinese.

Narry is the Mongol name for the disease which is brought on by drinking whisky. The stomach is burnt to such an extent that almost nothing will enter it, or entering it, cannot remain. It is soon returned, and the patient gets thinner and weaker day by day, till he dies of starvation. I have no means of getting statistics, but, from subjects I have seen, and from the many eager inquiries I have heard made about the possibility of curing it, it would seem that a good number die of this disease.

Mongol patients and Mongol doctors believe in the efficacy of prayer as a curative agency. When a man puts himself under medical treatment, he usually starts off temple or lama services, giving gifts according to his means, and knowing that the nature and extent of the services will depend on the value of the offering presented. There are numbers of people who believe that their recovery from sickness was through the power of the services performed; and it is worthy of note that they do not consider the prayer and medicine as two *rival* methods of cure, but rather the two sides of the same thing. Medicine is the human means, the prayer is the appeal to the superhuman.

People who cannot afford temple services, or patients suffering from a minor affliction, usually have a lama come to their tent and recite the necessary prayers. Throwing about small pinches of millet seed is a usual part of such a service. A man who had called a lama to say prayer to reduce the inflammation of his eye had his purpose frustrated in a singular manner. The lama threw the millet towards the patient; one of the seeds struck the eye and produced an ulcer, or cloud, as the Mongols call it, which dimmed his vision ever after. The precise nature of the service appropriate to the occasion is usually determined by some lama of high standing. Some of the living Buddhas have a great reputation, from the responses they give when consulted as to whether a patient will recover, and what means he should use. A very common response is "Not alarming; drink medicine, and have prayers said." Pilgrimages are often prescribed, and have the reputation of being effectual. I once heard it seriously proposed to send a man who had lost the use of his legs on a pilgrimage of some hundreds of miles. His advisers seemed seriously to think that if he could crawl there and back he would stand a good chance of being cured!

On another occasion I met a man just reaching his home after accomplishing a long pilgrimage for the cure of toothache. He was no better; and a few seconds with a pair of forceps did more to relieve him than all the hundreds of miles he had walked.

Prevention.—Mongols do not believe much in prophylactics. When they come and say a certain kind of food disagrees with them, they think you are making fun of them when you tell them to avoid that article of diet. Cure a man of his rheumatism, and he will think you are admitting the feebleness of your remedy when you instruct him to avoid damp and cold in future. If inaction or sedentary occupation has made him ill, he thinks you are a poor doctor if, in addition to your medicine, you prescribe exercise. Their habitual contempt and disregard of precautions makes it a thankless task to attempt to relieve them from some kinds of suffering. In a short time their carelessness makes them as bad as ever again.

---

* The Chinese barbers exercise this beating, thumping, or kneading operation, and it was recognised as one of the departments in the great medical college under the title of *an-moh k'o.*

There is, however, a singular religious ceremony which is prophylactic in its meaning. The Mongol name for the performance of the ceremony is *S'awr Jalena.* A triangular pyramid is made of dough on a wood frame. The dough is coloured red and moulded rather prettily. On the top is the representation of a skull. In the forenoon it stands in the temple, while a service is being held, and, before it is carried out, old and young pass under it. When the preliminaries are completed, the head lama of the temple, in his most impressive robes, heads a solemn procession and leads the way to an erection of bushes, or other inflammable material, prepared and set up on the plain a short distance from the temple. The procession moves slowly along to the sound of two immense trumpets ten or twelve feet long. In addition to the chief lama, there is a number of men in masks, hideous representations of the heads of deer and other animals, and clad in showy garments. The worshippers assembled for the occasion bring up the rear and usually make a large company. Arrived at the spot selected, the chief lama takes his stand; the other performers crowd around; the rest of the lamas and the spectators generally close up behind, and quite a little service of chanting prayers and blowing trumpets is gone through. Sometimes a part of the service consists of the chief lama waving a black handkerchief towards the skull-crowned pyramid. Sometimes this part of the ceremony is not performed. After some time, at a signal from the chief lama, the pile of brushwood is lighted. As it blazes up, the pyramid is thrown headlong into it, a man who has been standing ready with gun in hand fires off his piece at it, the attendant lamas go three times round their chief to congratulate him; he replies "It has become fortunate for the many," and the whole crowd of lamas and spectators, without waiting to see the doomed structure consumed, hurry off back to the temple as fast as they can. The ceremony is impressive, but there is only one step from the sublime to the ridiculous. While the others are hurrying back to the temple, a single lama may be seen poking about the fire. He is trying to rescue from the flames the few inches of board on which the structure stood, in the hope that it may serve again on the next occasion. The exact meaning of the ceremony is a little difficult to get at, because Mongols, when questioned, are in the habit of giving answers utterly unreliable, and those whom I have questioned on this point have given disagreeing accounts of it. It seems, as far as I can gather, to be meant to ward off evil in the future. Disease, plague, death, misfortune, adversity generally, to man and beast, are supposed to be warded off by it. One man described it as meant to "kill the devils," and a youth once was anxious that I should go and pass under it, as it stood in the temple, assuring me that if I did so I should have no disease, misfortune, or trouble in the future. It seems to be meant to avert suffering by the vicarious principle. All these evils that would have come on the people, cattle, and country, are, as it were, laid on the doomed pyramid; it is carried forth to the desert, the black handkerchief of the officiating chief lama seems to move maledictions towards it, and it is thrown into the fire as a thing accursed and to be destroyed.

One of the *sad sights* seen was that of a sick Chinaman near his end. He was one of a company of four who went about dressing skins, of which the Mongols make garments. He had been an opium taker, and an incurable diarrhœa had seized him. At the time he was lodging with the Mongol for whom the party had come to dress skins, but the Mongol seeing he would die, and fearing trouble and expense over his death, ordered him off the premises. Borrowing an ox cart, his companions had him conveyed away some five or ten miles, jolted in the rude vehicle, and suffering from the blazing sun, to a place where some Chinese acquaintances were digging a well. They had a tent of their own, most likely a poor ragged white cloth affair, open to the winds and pervious to the rain, and in this the poor man hoped he might be permitted to die. It was the dark side of the picture. The glorious summer, the green and flowery plains, the fattening flocks, the herds exulting in the deep pastures, the gay Mongols riding about, the white tents bathed in the sunlight and gleaming from afar. In the midst of all this, a feeble man, far from home and kin, sick unto death, cast forth from his poor lodging, and seeking for a place to lie down and die in. The Mongols are a hospitable race, but pray ye that ye may not get sick on their hands.

LONDON BANKRUPTCY COURT.

(REPORTED FOR "THE CHEMIST AND DRUGGIST.")

F. A. & M. Zimmermann, Importers of Fine Chemicals and Chemical Apparatus and Drug Merchants.

This case has been already noticed in The Chemist and Druggist. The debtors had carried on an extensive business in Aldgate Buildings, Fenchurch Street; and at an adjourned meeting of their creditors, held on July 16, it was resolved to liquidate the estate by arrangement (not in bankruptcy); Mr. W. Edwards, accountant, 18 King Street, Cheapside, being appointed trustee, together with the following committee of inspection: Mr. Albert Beaumitz, 8 Hart Street, Wood Street; Mr. Albert Domeier, of 3 Botolph Lane; Mr. Hermann Rubeck, 14 Mincing Lane; Mr. D. W. Greenhough, of 5 Fen Court; and Mr. Sidney Chapman, of 135 Fenchurch Street. The debtor's statement of affairs presented the following summary:—Creditors unsecured, 18,038*l.* 15*s.* 4*d.*; ditto fully secured, 3,098*l.* 3*s.* 11*d.*; ditto partly secured, 42,119*l.* 0*s.* 11*d.*; other liabilities, 7,475*l.* 5*s.*; preferential claims, 188*l.* 16*s.* 2*d.*; liabilities on bills discounted, 25,289*l.* 11*s.* 5*d.*, of which 5,354*l.* 9*s.* 9*d.* are expected to rank against the estate; total unsecured claims, 49,773*l.* 0*s.* 10*d.* Assets—stock of drugs, chemicals, and chemical apparatus (cost 10,683*l.*), estimated to realise 7,700*l.*; book debts (6,260*l.*), estimated at 5,900*l.*; cash, 1,763*l.*; bills of exchange, 98*l.* 12*s.* 2*d.*; furniture, &c., 300*l.*; other property, 5,000*l.*; and an estimated surplus of 245*l.* from securities in the hands of creditors, making total assets, 21,003*l.* 17*s.* 11*d.* On July 27 Mr. Van Sandau applied to Mr. Registrar Keene for leave to register the resolutions. There was no opposition, and registration was ordered.

F. Wright, Chemist & Druggist, 329 Kennington Road.

The adjudication in this case was obtained upon the petition of Mr. W. J. Lemaitre, shop fitter, 101 Pentonville Road, in respect of a debt of 169*l.* 6*s.* 8*d.*, and the first meeting under the bankruptcy was held on the 3rd inst. before Mr. Registrar Murray. Proofs for about 300*l.* were admitted, and Mr. Washington Hirschfeld, merchant, of Clarendon Chambers, Villiers Street, was appointed trustee, with a committee of inspection, namely, Mr. W. J. Lemaitre, 101 Pentonville Road; and Mr. G. A. Hyem, of 35 Reedworth Street, Kennington. November 9, at eleven, was fixed for the bankrupt's public examination. No accounts were filed.

McLean & Bamber.

A first meeting was held before Mr. Registrar Murray on the 6th inst., under the bankruptcy of Alexander McLean, described as of 4 Trinity Square, Southwark, manufacturer, and Henry Kelway Bamber, of 5 Westminster Chambers, Victoria Street, analytical chemist, formerly carrying on business in co-partnership at Stoke-upon-Trent under the firm of Alexander McLean & Co. The adjudication was made upon the petition of Mr. John Harvey, of 13 Upper Thames Street, gentleman, a creditor for 184*l.* 4*s.* 4*d.* No accounts were rendered, but it is believed that the debts are under 1,000*l.*, and that the assets will produce more than sufficient to pay the creditors in full. Mr. W. O. Tibbetts, accountant, 57 Moorgate Street, was appointed trustee; and Mr. J. Harvey, 13 Upper Thames Street, and Mr. Albert Martin, of Spencer House, Dulwich Road, were nominated a committee of inspection. November 13, at eleven, was fixed for the bankrupts' public examination.

[The following list has been compiled expressly for The Chemist and Druggist by L. de Fontainemoreau & Co., Patent Agents, 4 South Street, Finsbury, London; 10 Rue de la Fidélité, Paris; and 33 Rue des Minimes, Brussels.]

Provisional Protection for six months has been granted for the following:—

2102. W. Darlow and H. Fairfax, of 443 Strand. A new or improved method of applying magnetism in the manufacture of articles of food for medicinal and other purposes. Dated June 8, 1875.

2109. R. Hasenclever, of Stolberg, Prussia. Improvements in the treatment of the gases developed by the decomposition of chlorides for the production of chlorine. Dated June 9, 1875.

2148. E. A. Parnell, of Swansea, Glamorganshire. Improvements in the manufacture of arsenic acid, arsenious acid, metallic arsenic, and binarsenate of soda. Dated June 11, 1875.

2174. F. Wirth, of Frankfort-on-the-Maine, Germany. Improvements in the process of decomposing ammoniacal distillates. Dated June 14, 1875.

2217. N. Thompson, of Brooklyn, New York. Improvements in stoppers for bottles, jars, and other hollow articles. Dated June 16, 1875.

2284. J. Scoffern, of Lancaster Road, and R. J. Atcherley, of Penn Road Villas, Holloway. Improvements in the manufacture of acetic acid. Dated June 22, 1875.

2316. W. Riddell, of Foulden Road, Stoke Newington. Improvements in apparatus for the manufacture of chloride of lime. Dated June 24, 1875.

2338. D. Rylands, of Ardsley, Yorkshire. Improvements in stoppers or covers for bottles, jars, and other hollow articles, and in the clip or strap to be used therewith, for the purpose of securing and removing the same when required. Dated June 28, 1875.

2348. D. Nicoll, of Clement's Inn, Strand. Improvements in the preparation and preservation of food. Dated June 28, 1875.

2398. W. Whitthread, of Liverpool. Improvements in the manufacture of mono-calcic phosphate. Dated July 2, 1875.

2411. H. C. Wordsworth, of 5A Sloane Street, Knightsbridge, S.W. Improvements in respirators. Dated July 3, 1875.

2441. J. A. C. F. Clouet, of 2 Rue Ste. Appoline, Paris. A new or improved mode and means for the manufacture of bichromate of potash. Dated July 6, 1875.

2446. Emma J. Thorn, of Pendleton, Lancashire. Improvements in apparatus for filling bottles and other vessels with aërated and other liquids, and for drawing off the same. Dated July 7, 1875.

Letters Patent have been issued for the following:—

103. T. Howitt, of Spring Gardens, Bradford, S. Walker, and J. Gibson, of Shipley, all in the county of York. Improvements in stoppering bottles and other similar articles. Dated January 12, 1875.

107. B. F. Weatherdon, of Chancery Lane. An improved disinfecting fluid. Dated January 12, 1875.

147. J. Hargreaves, of Widnes, Lancashire. Improvements in the manufacture of sulphates and in apparatus employed therefor. Dated January 14, 1875.

200. M. Mackay, of Mark Street, Finsbury. Certain compounds for dissolving resins and gum resins, and for other purposes, for which alcohol or methylated spirit is now employed. Dated January 19, 1875.

262. H. Aylesbury, of Gloucester. Improvements in stoppers for bottles for containing aërated and other liquids. Dated January 23, 1875.

291. C. Espir, of Berners Street, Oxford Street. A new or improved mining powder; also applicable to blasting purposes. Dated January 26, 1875.

492. H. L. Jones, of Webster's Hotel, Ely Place, Holborn. Improvements in solid and liquid disinfectants and deodorisers. Dated February 10, 1875.

742. J. H. Johnson, of London. Improvements in the manufacture of capsules for enclosing medicaments and other substances, and in the apparatus employed therein. Dated March 1, 1875.

1016. J. P. O'Brien, of Liverpool. Improvements in machinery or apparatus for capsuling bottles and other like receptacles. Dated March 19, 1875.

1318. W. Corry, F.C.S., of Belfast, Antrim, Ireland. Improvements in the manufacture of aërated waters, and in apparatus and vessels therefor. Dated April 12, 1875.

1909. H. Deacon, of Appleton House, Widnes. Improvements in the manufacture of chlorine. Dated May 25, 1875.

Specifications published during the month:—

Postage 1*d.* each extra.

1874.

3824. N. Thompson. Stoppers for bottles, jars, &c. 6*d.*
3972. T. Sutcliffe. Bottles for aërated liquids. 4*d.*
3998. M. Stuart. Feeding bottles. 4*d.*
4037. H. B. Condy. Manufacture of acetate of soda. 4*d.*
4097. W. Jack. Invalid's bedsteads. 10*d.*
4112. D. A. Fyfe and another. Recovering alkali from waste liquids. 1*s.*
4175. L. Mond. Manufacture of carbonates of soda. 4*d.*

1875.

53. J. Bowman. Bottles, &c. 8*d.*

BANKRUPTS.

Audley, Henry, Barrowstrand Street, Waterford, grocer, druggist, oil and colour merchant. July 20.

Hames, John, Barnstaple, Devon, chemist and coal merchant. July 6.

McLean, Alexander, 14 Trinity Square, Southwark, manufacturer, and Henry K. Bamber, 5 Westminster Chambers, Victoria Street, analytical chemist, late of Stoke-on-Trent, Staffordshire, trading as McLean & Co. July 15.

Wright, Frederick, 329 Kennington Road, chemist. July 19.

LIQUIDATIONS.

(By arrangement or composition.)

Notices of first meetings have been issued *in re* the following estates. The dates are those of the petitions:—

Blagden, Robert, Minchinhampton, Gloucestershire, surgeon. July 16.

Digby, Edward T., and Christopher Gandy, trading as Digby, Gandy & Co., Peter's Lane, Liverpool, wine merchants. July 19.

Drummond, John, Armagh Road, Old Ford, gum merchant. July 7.

Kelly, Jeremiah H., 81 The Grove, Hammersmith, doctor. July 24.

Magson, Henry, Whittaker, near Rochdale, traveller, late chemical manufacturer. July 9.

Mann, John, St. Ann's Well Road, Nottingham, chemist. July 24.

Oldershaw, John, Blackburn Road, Accrington, chemist and drysalter. July 10.

Parfitt, Henry, 18 Wimpole Street, Marylebone, surgeon. June 22.

Purcell, Ferdinand A., 9 High Street, Marylebone, and 35 Welbeck Street, M.D. July 10.

Page, Frederick S., Black Heath, Staffs., surgeon's assistant. July 31.

Schoon, George, Armley Road, Leeds, chemist. July 23.

DIVIDENDS DECLARED.

Benson, George W. (Liq.), Welshpool, Montgomeryshire, druggist and victualler. Final div. 3*s.* 2*d.*; T. Roper, 3 Church Street, Welshpool.

Coulthard, Christopher (Bkt.), High Street, Camden Town, chemist's assistant. Div. 8½*d.*; W. Felgate, 148 Bayham Street, Camden Town.

Field, William, and Richard F. Hare (Bkt.), Seaward Street, Goswell Street, chemists. 3rd and final div. 1*s.* 6½*d.*; and 13*s.* 6½*d.* to new proofs; P. Paget, Bankruptcy Court, Basinghall Street.

Hodge, John (Liq.), Darlington, medical herbalist. 1st div. 5*s.*; G. E. Pybus, Darlington.

Winter, James (Bkt.), Rosslyn Terrace, Hampstead, surgeon. 2nd div. 5¾*d.*; P. Paget, Bankruptcy Court, Basinghall Street.

PARTNERSHIPS DISSOLVED.

Burgoynes, Burbidges & Co., 16 Coleman Street, manufacturing chemists. July 24. As regards J. Attwood.

Clayton & Ellinor, Wicker, Sheffield, chemists. June 30. Debts by William Clayton.

Eberlen, Otto & Co., 29 Mincing Lane, drug and general merchants. July 24. Debts by R. Sweetlove.

Gridley & Co., Duke Street and Weston Street, Southwark, and Camomile Street, City, isinglass merchants. June 30. Debts by Cattley & Gridley.

Hargreaves & Metcalfe, Bell Bush and Gargrave, Yorks, dentists. Feb. 1. Debts by James Hargreaves.

Holt & Cooper, trading as The Church Chemical Co., Peel Bank, Church, Lancashire, chemist and oil merchants. July 28.

Huson & Arrott, Liverpool, chemists. May 31. As regards Alexander R. Arrott.

Lees, James and Reuben, Stalybridge, Lancashire, chemists. June 24. Debts by James Lees.

Marshall, John, Son & Co., Hunslet, Leeds, cudbear manufacturers and drysalters. July 22. As regards C. Walsh.

Mason & Read, 41 Jewin Street, surgeons. July 4.

Moorhead & Co., Belfast, druggists and merchants. July 1.

Scawin & Wortley, Market Place, Durham, chemists. June 29.

Steer, Alfred & Co., Occupation Road, Walworth, bottled beer merchants and bleaching powder and furniture polish manufacturers. July 1. Debts by J. Goodwin.

Turner, Hardy & Watts, Manchester and Fleet Street, London, homœpathic chemists. As regards Henry Turner.

Vinrace & Drummond, Great Hampton Street, and Steelhouse Lane, Birmingham, surgeons. June 30.

Withecombe & Law, Richmond, surgeons. June 29. Debts by Alfred Roberts Law.

THE CHEMIST AND DRUGGIST

☞ *The next number of "The Chemist and Druggist" (September 15), will be the annual EDUCATIONAL NUMBER. It will contain full particulars of the various Pharmaceutical, Medical, and Scientific Schools for the ensuing Session. Advertisements for that Issue should be sent at an early date.*

Secretaries of schools, &c., will oblige by forwarding particulars to the Editor.

OFFICE—Colonial Buildings, 44a Cannon Street, London.

[*For Advertisement Tariff, see page* 251.]

RENDALL'S THEOBROMINE,
OR
CONCENTRATED COCOA,

BEING a first-class article, and nicely got up, commands a good sale by all Chemists who bring it under the notice of their customers.

In 1*s.*, 2*s.*, 3*s.* 9*d.*, and 7*s.* 6*d.* tins, through the Wholesale Houses, or direct from the Proprietor,

J. M. RENDALL,
28 QUEEN STREET, EXETER.
Chief Wholesale Agents—
SANGER & SONS, 150 OXFORD STREET, W.

PLATTNER'S MANUAL OF QUALITATIVE AND QUANTITATIVE ANALYSIS WITH THE BLOW-PIPE.

From the last German Edition, revised and enlarged. By Professor TH. RICHTER, of the Royal Saxon Mining Academy. Translated by Professor H. B. CORNWALL, Assistant in the Columbia School of Mines, New York. Illustrated with 87 Woodcuts and 1 Lithographic Plate. Second and only complete English Edition, revised and reduced in price. 8vo. cloth, 24*s.*

London: SAMPSON LOW, MARSTON, LOW & SEARLE, Crown Buildings, 188 Fleet Street.

POROUS BATTERY CELLS
OF SUPERIOR QUALITY.
PATENT PLUMBAGO CRUCIBLE COMPANY,
Sole Makers of Morgan's Patent Crucibles,
BATTERSEA WORKS, LONDON, S.W.

DOMESTIC FILTRATION.

"WITH regard to the Silicated Carbon Filters, I have made many experiments upon them, and have been astonished at the energy and rapidity of their action. I passed through a small Filter of this make some of the worst description of water supplied by the London Water Companies, and found it, after filtration, to have become as pure as the very best London water. My experiments show that the Filter exercises a decomposing action—a chemical action—on the Organic impurities in Drinking Water. I have no doubt that water, which is dangerous from the Organic Matter contained in it, becomes *safe* on passing through the Silicated Carbon Filter. A point of some importance, shown by my experiments, is that a Second Filtration still further improves the quality of Drinking Water. After being in use for a considerable period, Filters lose their power and require renovation. I have found that the passage of a little Hot Water through the Silicated Carbon Filter, and afterwards blowing a little air through it, restores its power."

J. ALFRED WANKLYN, M.R.C.S., London,
Formerly Professor of Chemistry in the London Institution;
Joint Author of a Book on Water Analysis, and of the
Ammonia Process.

Trade Notice.—Condy's Fluid.

Referring to an advertisement in THE CHEMIST AND DRUGGIST of 15th July, emanating from Mr. H. B. Condy, of Battersea, we beg to notify that we have declined to keep his Preparations, and supply only the Condy's Fluid, &c., manufactured by the Condy'-Fluid Company.

171A Aldersgate Street, E.C.,
15th August, 1875.

FRIEDRICHSHALL · VICHY · CARLSBAD · PULLNA ·
THE NATURAL MINERAL WATERS OF
AND ALL OTHER SPAS
IMPORTED
BY
HOOPER AND COMPY,
7 PALL MALL EAST, LONDON.

VICHY WATER COMPANY
27 MARGARET STREET, REGENT STREET,
LONDON.
General Depôt for all Mineral Waters.

THE PHARMACEUTICAL BENEVOLENT FUND.

THE Benevolent Fund in connection with the Pharmaceutical Society has, ever since its establishment, been administered with a degree of judgment and consideration that has completely exempted it from anything approaching adverse criticism in any quarter. After the passing of the Pharmacy Act its scope was extended beyond the limits of the Pharmaceutical Society to the whole trade; and quite recently, mainly through the efforts of Mr. Robbins, the safe policy of "hoarding," which had hitherto been most strictly followed, has been partially abandoned for the more liberal, the more useful, and in all respects the more enlightened system, suggested by King Solomon as well as by ourselves, of scattering with a view of increasing. We have on previous occasions applauded these movements most heartily. No one will credit us with other than the best motives in again referring to what we regard as still remaining improvements to be effected in the distribution of the handsome property and income at the disposal of the managers of this fund.

We refer subscribers and all interested in the Benevolent Fund to the article which we print in this number on "Charity Electioneering." This has been written for us and at our request by a gentleman thoroughly conversant with the working of the great charitable institutions of our country, but not a pharmaceutist. Some of the abuses signalised in that paper do not occur in connection with the Pharmaceutical Benevolent Fund. "Trafficking in votes" and "professional "vote-jobbers" have not, so far as we know, disgraced the exercise of this charity. On the contrary, a considerable proportion of its benefits is annually distributed in the manner expressly recommended by the Charity Voting Reform Association. Whether it would not be desirable to extend the same system to the appointment of annuitants, and thus save the cruelty (for no other word is sufficiently explicit) annually inflicted on a certain few, who must needs be the most distressed and necessitous in our ranks, is the simple question that we wish to bring prominently forward. Many of us have at one time or another promoted the candidature of some one personally known to us. On such an occasion the arguments against canvassing for votes on the part of the candidates must have occurred. It is so obvious that those candidates with the greatest number of friends and the most money at command, that is to say, the least needy, secure the prizes, that we wonder such a system could have ever been permitted. Is there any good reason why it should continue, at any rate in connection with the Pharmaceutical Benevolent Fund?

It might be objectionable for the Pharmaceutical Council to take in hand the exclusive distribution of this fund. In the first place, that body is elected for other objects; and, secondly, it does not necessarily represent all the subscribers. That difficulty could be at once surmounted by electing annually, or less frequently, a small committee quite independent of the Council, to whom should be entrusted the duty of examining the cases submitted, and applying the available wealth. It would be an honour to serve on such a committee, and the election would entail precisely the same trouble and expense, and no more, as that at present conducted for the annuitants direct. According to the remarkable figures given in our other article, a majority averaging 8 to 1 of the subscribers to analogous charities, as far as their views can be discovered, is in favour of a reform like this; and we cannot doubt that at least an equal proportion of subscribers to the Pharmaceutical Benevolent Fund would prefer it.

While we are on the subject we would make one further remark in reference to this Benevolent Fund. Those responsible for its management urge on us not unfrequently the importance of more abundant contributions. We presume and believe they have good reason for thus pressing the claims of a charity which it is the especial duty of chemists and druggists to maintain in an efficient condition. And, further, we are quite certain that the income of the fund can be very largely increased, could be doubled even, if those who know the requisitions on it would give us a plain unvarnished statement of the extent of distress prevailing among our fallen comrades, and show us clearly that the present funds are not adequate to supply judicious relief.

PHARMACY IN THE STONE AGE.

Chemists and druggists of this century may perhaps be gratified to know that they can claim an ancestry of such colossal proportion that compared to it the family trees of all the British aristocracy, placed end on end, would appear only as a miserable pigmy. In the neighbourhood of Cherokee, State of California, geological traces of an ancient city have been discovered, which, according to scientific methods of calculation, must have been destroyed not less than one hundred and eighty thousand years ago. The evidence on which the existence of that city is chiefly founded is the discovery of a number of stone mortars, distributed, we are told, "in such a manner as to indicate with great positiveness the former existence of a human settlement on that ancient beach, &c." Does the writer of the above mean that the mortars were found at about the same intervals as pharmacies are now spotted about in a populous town? "In one instance a mortar was found standing upright with the pestle in it, apparently just as it had been left by its owner." Its owner, indeed! How coolly we talk of the phenomenon which this wonderful pestle and mortar suggest. Perhaps he was an officer of the Cherokee Association for the Advancement of Pharmacy. Poor man, we trust his pharmaceutical heaven may never be disturbed with the discovery that the science which likely enough he loved so well has not advanced much after all those eighteen hundred centuries which separate him from us.

THE MARCH OF HOMŒOPATHY.

A "World's Homœopathic Convention" is to be held at Philadelphia during the Centenary. Great preparations are being made for this event by the American Institute of Homœopathy. Those who attend this convention may at any rate count upon some eloquence after the style of the paragraph which follows, and which we extract from the opening address delivered lately to the American Institute before referred to, by its President, Dr. W. H. Halcombe, of New Orleans:—

"The Persian in his day had the richest, vastest empire in the world. He boasted that his laws were unalterable, and his wisdom so great that his opinions were never changed. A small but sturdy people arose on his borders—the Greek:—subtle and supple and great students of nature; full of curiosity and credulous of new things. With tents that covered the land and sails that whitened the sea, and with mingled arrogance and contempt, the Persian came on to annihilate his insignificant foe. The result was Salamis and Marathon. And in due process of time, when the causes which secretly undermine one system of things and secretly build up another, had done their perfect work, as was ordained of God, the Greek arose in his turn, overran the empire of his enemy without sheathing his sword, trampled the unalterable laws in the dust, and divided out all his provinces among the followers of his camp."

Does the reader perceive who are meant by the Greeks in this rhetoric?

COPIES OF PRESCRIPTIONS.

"M.D.," writing to the *Lancet*, groans over what he regards as "a glaring instance of how workers are robbed in the present day of their just reward." He was in a chemist's shop, perhaps on the watch for some exhibition of turpitude, when a gentleman entered and asked the assistant to send him a copy of a prescription, as he wanted to send it into the country to a friend, he having previously borrowed it of another friend, and having returned it without copying it. We are a little puzzled to discover among this crowd alluded to by "M.D." who was the original "prescribee." But that is of small consequence; the point to notice is the chemist's conduct. He did not horsewhip the gentleman for suggesting such a crime, nor did he challenge him to a duel. But—Hear it, oh Mother Earth! Hear it, oh Heaven—he consented. Says M.D., "Well may junior physicians and prescribers be starving after having invested their capital and worked with their brains if this kind of thing is allowed to go on." But it will go on so long as there are people in the world credulous enough to believe in the talismanic effect of "a prescription that cost a guinea." And we may add that it would be a bad stroke of business for M.D.'s to upset this superstition.

INTERNATIONAL PHARMACY.

Mr. Greenish thinks the Pharmaceutical Society ought to send a delegate to Philadelphia next year to attend the Exhibition and the meeting of the American Pharmaceutical Association. He thinks the visit of his colleague and himself to St. Petersburg last year was an international act of courtesy and friend ship of "great value." We are glad to believe that the Pharmaceutical Society's eighty pounds spent on that journey was instrumental in cementing the fraternity between Great Britain and Russia. But the council is on a perilous path, and we urge them to be content with the present brilliant results of their foreign policy. If their delegates possess so great an influence for good they must also be potent for evil; and we shudder to think of a bloody war arising out of a pharmaceutical dispute.

NEW REMEDIES.

Aabec is the latest, and Australia is its dwelling place. It is a diaphoretic, and is to rival jaborandi.

Damiana—a name which must certainly be altered for our language—is from the western borders of Mexico. The tincture and extract of the plant have been made by a doctor in Baltimore, who finds them very active on the kidneys and generative organs.

Rozsnay advocates two parts of sulphite of soda with one part of salicylic acid, dissolved in fifty parts of water, as a general application to wounds, or for any disinfecting purpose. The sulphite of soda facilitates the solution of the acid, and is said to enhance its disinfecting properties.

THE PHARMACEUTICAL CONFERENCE.

Through the courtesy of Professor Attfield we are able to present in a nearly complete form the scientific programme for the Bristol meeting. Of course, in addition to the list printed below there will be the President's address and the Committee's report, the latter including, we hear, a very satisfactory financial statement. The Papers referred to are the following:—

1. *Linimentum Terebinthinæ Aceticum.* W. Symons, F.C.S.
2. *Aqua Chloroformi.* T. B. Groves, F.C.S.
3. Researches on the Oxidation of Essential Oils. Chas. T. Kingzett, F.C.S.
4. The Microscopy of Natal Arrowroot. T. Greenish, F.C.S.
5. On the Use of Optical Analysis in Pharmacy. Mr. H. Pocklington.
6. Roger de la Bastie's Hardened Glass. Mr. H. Pocklington.
7. The possible Applications of Salicylic Acid in Pharmacy. F. B. Benger, F.C.S.
8. Report on the Magnesian Carbonates of Trade. Mr. J. C. Thresh.
9. Fluid Preparations of Cantharides. Mr. James Deane.
10. Contributions to our Knowledge of *Chondodendron Tormentosum.* John Moss, F.C.S.
11. Report on Jaborandi. Mr. A. W. Gerrard.
12. Report on the Phosphate of Calcium of Trade. Mr. J. F. Brown.
13. Note on the Preservation of Hydrocyanic Acid J. Williams, F.C.S.
14. Japanese Oil of Peppermint. Dr. C. R. Alder Wright, F.C.S.
15. New Derivatives from the Opium Alkaloids. Dr. C. R. Alder Wright, F.C.S.
16. The Horsley-Stoddart Method of Estimating Fat in Milk. A. H. Allen, F.C.S.
17. Citrate of Lithium. Chas. Umney, F.C.S.
18. Commercial Compound Colocynth Pill. Mr. W. Laird.

As we stated last month, the Conference meetings will be held on August 24 and 25, and the foregoing indication of subjects for discussion seems to us most promising in regard to pharmaceutical interest and usefulness.

Abstracts of Foreign Papers.

FUCHSINE IN WINE.

In a French journal we read that many wines are coloured with fuchsine, a salt the poisonous character of which has long been recognised.

To detect this fraud put 50 grammes of the suspected wine in a white glass vial capable of holding about four ounces. Treat this first with 10 grammes of sub-acetate of lead, and afterwards with 20 grammes of amylic alcohol. Shake the mixture briskly, and let the amylic alcohol separate. If it remain uncoloured that proves that fuchsine has not been employed; but if it presents a red tint the addition of fuchsine is thereby demonstrated.

The *rationale* of this test is this:—The colouring matter of wine is precipitable by a lead salt, while fuchsine is not. But amylic alcohol will dissolve both if they are free. It will not, however, touch œnoline when combined with lead, although it still retains the power of extracting fuchsine from the same liquid.

ADULTERATION OF BEESWAX.

To detect the adulteration of beeswax with Japan wax, M. Hilger[*] suggests taking the specific gravity of the suspected product rather than making a chemical analysis; it is impossible to detect the fraud from outward appearance. From a series of experiments, the author finds that the specific gravity of beeswax adulterated with Japan wax is less than that of either taken separately. The melting and solidifying points afford no certain indication. M. Hilger gives a table of specific gravities, including beeswax, Japan wax, and various mixtures of the two.

TEST FOR MORPHIA.

M. A. **Huseman**[†] advises the use of chlorating substances, such as chlorate of potash, hypochloride of soda, &c., together with sulphuric acid, as a test for morphia. The reaction causes a bright blue or perhaps red violet colour, which gradually becomes blood red, and finally fades considerably. This result is due to the modification of the morphia by sulphuric acid, and can be obtained in the presence of a hundredth of a milligramme of morphia.

THE DETECTION OF NITROBENZINE IN OIL OF BITTER ALMONDS.

M. **Jacquemin**,[‡] in a Paper "On Nitrobenzine considered Analytically and Toxicologically," makes some remarks on Dragendorff's process for the detection of nitrobenzine in oil of bitter almonds. This consists in mixing five to eight drops of the oil with as much alcohol, and dropping into the solution a piece of sodium as large as a pea. The metal becomes covered with a white flakey coating, and if the oil of almonds be pure the liquid does not change colour, whilst if nitrobenzine be present it turns a dark brown. In addition to the inconvenience of using so much oil, and the need of a metal rarely found in pharmaceutists' laboratories, M. Jacquemin finds the method not reliable, as the sodium gives a brown colour with many organic bodies. The old process of separating aniline by potash and ether is preferable, and the author proposes to reduce the aniline by stannite of soda, or by tin and hydrate of soda. One drop of the oil is sufficient to show the adulteration, either by puce coloured oxide of lead, or by the blue reaction with phenol and hypochlorite of sodium. The ore is dissolved in 20 c.c. of alcohol at 50°, and reduced by iron or zinc and acids, or, better still, it may be added to a concentrated solution of stannite of sodium or hydrate of sodium and tin, and the test applied as above.

---

[*] *Journ. de Pharm. et de Chim.*, June 1875, p. 499, from *Journ. Conn. Med.*

[†] *Journ. de Pharm. et de Chim.*, June 1875, p. 517 (*Archiv. der Pharm.*, March 1875, p. 231).

[‡] *Journ. de Pharm. et de Chim.*, June 1875, p. 457.

UROCHLORALIC ACID.

MM. Musculus and Mering* have obtained a new body from the urine of patients under treatment by hydrate of chloral. This urine is found to be strongly acid; it reduces cupro potassic solutions, and rotates polarised light to the left, the rotation being increased in proportion to the amount of chloral administered. The urine, after being evaporated and slightly acidulated with sulphuric or hydrochloric acid, is treated with ether, the ether removed and evaporated, a substance being obtained, which, with potash salts, gives a beautiful white powder composed of microscopic crystals. The free acid forms stellate groups of crystals, and examined under the microscope resembles tyrosine.

An ultimate analysis of these crystals gave—carbon, 31·60; hydrogen, 4·36; and chlorine, 26·70. This acid is very soluble in water and alcohol; almost insoluble in pure ether; reddens sunflower paper; decomposes carbonates with effervescence, and is not displaced by acetic acid. The authors have designated this body urochloralic acid. They believe that the chloral combines with a product of the organism, and thus passes into the urine. They have also succeeded in obtaining the potash salt, sodium and copper salts in a crystalline state.

METHYLIC AND ETHYLIC ALCOHOLS.

The extreme difficulty of obtaining a satisfactory method of recognising the presence of ethylic and methylic alcohols in presence of each other has led to the communication of two methods for achieving this object. One is by M. Terhelot, and the other by MM. Riche & Bardy.† The former has for its object the detection of spirits of wine in wood spirit, and consists in heating the suspected mixture with twice its volume of concentrated sulphuric acid. Under these conditions methylic alcohol gives gaseous methylic ether, entirely absorbable by water or by concentrated sulphuric acid, whilst ordinary alcohol produces ethylene, a gas almost insoluble in water or in sulphuric acid, but which can be detected and estimated by its property of absorption by bromine. For the detection of methylic alcohol in spirits of wine, MM. Riche & Bardy give the following method:—Ten c.c of the suspected alcohol are distilled with 15 grammes of iodine and 2 grammes of amorphous phosphorus, the product being collected in 30 to 40 c.c. of water. The precipitated alcoholic iodide is separated and collected in a vessel containing 6 c.c. of aniline. The reaction is aided by placing the vessel in tepid water; at the end of an hour hot water is poured in to dissolve the crystals which are formed, and the liquid boiled until it becomes clear; by adding an alkaline solution, the alkaloids are liberated in the form of an oil. These alkaloids may be oxydised by perchloride of tin, iodine, chlorate of potash, or by Hofman's mixture of quartz sand, chloride of sodium, and nitrate of copper. Pure alcohol gives a reddish colour. Alcohol containing 1 per cent. of methylene gives a colour distinctly violet when seen by the side of the preceding. The violet colour is in proportion to the amount of methylene present.

NEUTRAL HYDROBROMIDE OF ESERINE.

Eserine, the active principle of the Calabar bean, discovered by M. A. Vée, is an alkaloid which readily forms compounds with acids. The salts as a rule are non-crystalline and very hygroscopic; an exception is the hydrobromide. The neutral sulphate of eserine, which is the only salt employed by oculists, presents itself in the form of yellowish, or sometimes red, masses. It may, however, be obtained colourless by complete avoidance of the oxydising action of the air, which transforms eserine into an inert crystallisable red substance. After having employed several acids, such as hydrochloric and oxalic, which give no better results than sulphuric, M. Duquesnel, as described in a note submitted to the Academy of Medicine, experimented with hydrobromic, which furnishes, slowly though it be, regular radial groups of crystals and fibrous crystalline crusts. The salt is slightly coloured, but its solution is almost colourless, especially if boiled distilled water, to which a little glycerine has been added, be used. The advantages of the new salt consist in its power of crystallising, in being perfectly soluble in water to a neutral solution, and in being quite stable in moist air. Like all of the salts of eserine, it contracts the pupil of the eye.

HIPPOCRATES AND MODERN MEDICINE.

The remarks which follow are condensed from a very long address delivered before the annual meeting of the British Medical Association at Edinburgh this month by Dr. J. Warburton Begbie, F.R.S.E.

The lecturer commenced by quoting Sir William Hamilton's enquiry, "Has the *practice* of medicine made a single step since Hippocrates?" and the object of the discourse was to show the advance which it was assumed might be claimed.

Sir William Hamilton quoted in support of his own—the negative—answer to the question which he had put several other learned men's dicta. Among these may be named Hoffmann's advice, "Fuge medicos et medicamenta si vis esse salvus," and that of Celsus, "Optima medicina est nou uti medicinâ."

To consider this matter it will be necessary first of all to consider the state of medicine as Hippocrates found and left it.

The doctor-priests of the Grecian temples, or Asclepiadæ, had acknowledged Æsculapius as its origin. The Asclepia, or temples, were erected in many parts of Greece, were ruled by the Asclepiadæ, and used in a manner not very unlike that in which hospitals are employed in modern times. To them the sick resorted for advice and cure. In one of the most distinguished of these temples—namely, that of Cos, built on the island of the same name, one of the Sporades, a group of scattered islands, as their appellation denotes, in the Ægean Sea, off the island of Crete and west coast of Asia Minor, Hippocrates, inheriting a recognised position, acted as an Æsculapian priest. He had been born, in all probability, in the four hundred and sixtieth year before the birth of Christ. But Hippocrates had not only the advantage of the most favourable study in the Asclepion of Cos; we know, on excellent authority, that, under the direction of Herodicus of Selymbria in Thrace, he became intimately acquainted with the practice then pursued in the gymnasia, while, through the instructions of Gorgias and Democritus, the former of Leontini in Sicily, the latter of Abdera in Thrace, and himself illustrious as the originator of the doctrine of atoms, he became thoroughly versed in the literature and philosophy of the age.

The foundation of the practice of Hippocrates, with which we are now more immediately concerned, was experience; but this experience of Hippocrates was rational in character, not a mere blind or misguided empiricism. No one could be more convinced of the fallaciousness of a blind empiricism than he was, and his condemnation of it may be recognised in the earliest, the best known, and perhaps the grandest of all the Hippocratic aphorisms, "experimentum periculosum, judicium difficile." Hippocrates believed in the existence of a principle, a spiritual essence, the preserver of all things in nature, the restorer of whatever had become disordered. The regulation and superintendence of all the actions of the system were due to this principle, to which he gave the name of Φύσις, Nature. Thus, he was led to consider that the chief duty of the physician consisted in watching the operations of Nature, endeavouring, as might be the case, to promote or restrain these, possibly in some, but these very rare instances, to counteract them. "Our natures," he remarks, or, if not he, one of his immediate descendants, who may reasonably be supposed to be expressing the views of his master, "our natures are the physicians of our diseases." It is in reference to this exposition of the function at once of nature and the physician in relation to disease that Sydenham, "the chief of English practical physicians," who in many particulars resembled the Father of Medicine, observes: "He it is whom we can never duly praise. He it is who then laid the solid and immovable foundation for the whole superstructure of medicine when he taught that 'our natures are the physicians of our diseases.'" The belief which Hippocrates had in this "vis conservatrix," "vis naturæ medicatrix," would, in the first place, make him, as we know from his writings he really was, a very close observer of the operations of Nature. It would further render him cautious in regard to interference with these, and resolute in his determination "to have two special objects in view with regard to diseases—namely, to do good, and to do no harm." There is, however, no ground for concluding that Hippocrates was an inert or purely expectant practitioner. On the contrary, there is abundant proof in the works which bear his name that, in limiting, as Sydenham has expressed it, "the province of medical art to the support of Nature when she was enfeebled, and to the coercion of her when she was outrageous," Hippocrates found occasion to be bold and decided in his method of treatment. His employment of powerful remedies is best exhibited in the instances of diseases which, according to the humoral doctrine promulgated by him, were to be relieved by the discharge of some peccant humour. Evacuants of various kinds were used with this intention, purgatives more especially, but likewise emetics, diuretics, and sudorifics. He drew blood by means of the lancet, the scarificator, and the cupping instrument, but with what careful consideration and thoughtfulness is well shown in the treatise Περὶ Διάιτης 'Οξέων ("On the Regimen in Acute Diseases"), in which he remarks concerning the treatment of pleuritis: "But if the pain be not removed by the fomentations, we ought not to foment for a long time, for this dries the lungs, and promotes suppuration; but if the pain point to the clavicle, or if there be heaviness in the arm, or about the breast, or above the diaphragm, one should open the inner vein at the elbow, and not hesitate to abstract a large quantity of blood, until it becomes much redder, or, instead of being pure red, it becomes livid; for both these states occur." What forcibly strikes the reader of the passage now quoted, and of those passages which immediately precede and follow it, is, as indeed Galen among the ancient, and many of the modern, commentators of Hippocrates have carefully noted, the manner in which the Father of Medicine commences with the milder means of affording relief from the pain of pleuritis, such as the employment of fomentations, the rules for the preparation and application of which, as laid down by him, are simply admirable; and only in the event of these failing to accomplish the object in view, he counsels that recourse should be had to blood-letting and the use of other powerful remedies, including cathartics.

---

* *Journ. de Pharm. et de Chim.*, June 1875, p. 492.

† *Journ. de Pharm. et de Chim.*, June 1875, pp. 468, 469.

It can never cease to afford material for wonder that through the genius of one man so much was accomplished, when we reflect on the circumstance that in the time of Hippocrates human anatomy had scarcely, if at all, been practised, that physiology was virtually unknown, and the use of remedial agents was almost entirely limited to articles of the vegetable kingdom, and these the indigenous plants of Greece and the neighbouring countries. To the subject of diet and regimen, however, Hippocrates paid the greatest attention. In the Hippocratic writings there occur terms which exactly correspond with those we so frequently employ; full, ordinary, and low diet. In the treatise Περὶ 'Αγμῶν, the following passage occurs:—"A diet slightly restricted will be sufficient in those cases in which there was no external wound at first, or when the bone does not protrude; but one should live rather sparingly until the tenth day, as being now deprived of exercise; and tender articles of food should be used, such as moderately loosen the bowels; but one should abstain altogether from flesh and wine, and then by degrees resume a more nourishing diet." It is sufficient, in passing, to make a brief reference to the paramount importance Hippocrates attached to the doctrine of crisis, and to the bearing which this had on the treatment of diseases. The doctrine of crisis, indeed, was an essential part of his system of humoralism, and had in consequence an intimate connection with the method of treatment he pursued. Critical events were evacuations of different kinds, occurring chiefly by the skin, bowels, and kidneys.

With the views he entertained as to crisis, there is further intimately blended the so-called Hippocratic doctrine of critical days. Galen expressly affirms that Hippocrates was the first author who treated of these, but whether this be true or not, we know that he attached very considerable importance to the doctrine. "Fevers," he remarks, "come to a crisis on the same days as to number on which men recover and die." It was the particular attention given by Hippocrates to the tendencies manifested by diseases to recovery, or, on the other hand, to an unfavourable termination, also to the occurrence of evacuations or of crises in their course, that led to the remarkable care with which he studied the whole subject of prognosis. There is no more interesting or valuable work in the whole Hippocratic collection than the one entitled Προγνωστικόν, Prænotiones, Prognostics; and happily, concerning its authenticity, as the undoubtedly genuine work of the Father of Medicine himself, there has never been any question.

The narration of individual cases of disease commenced with Hippocrates; he may, indeed, be said to have been the originator of the clinical study of medicine. A specimen of these reports may be quoted. In the first book of the "Epidemics," 'Επιδημίων, *a*, it is thus written: "Philiscus, who dwelt near the wall, was laid up. On the first day, fever acute; he perspired; night very disturbed. Second day, aggravation of symptoms; in the evening, an injection procured a good stool; night quiet. On the morning of the third day, and up to noon, appeared free from pain; but in the evening, acute fever, with perspiration; thirst, tongue dry; passed black urine; night disturbed; he did not sleep at all; his mind wandered on all subjects. On the fourth day, general paroxysms; urine black; night more endurable; urine of improved colour. On the fifth day, about noon, a little blood escaped from the nostrils; urine varied in appearance, with thready clouds resembling semen irregularly suspended in it. The urine did not deposit. A suppository caused passage of some feculent matter with wind. Night distressing; little sleep; talkativeness; delirium; extremities very cold, and could not be warmed; the patient voided black urine; he rested a little towards daybreak; lost speech; had a cold sweat; extremities livid. About the middle of the sixth day he died. The respiration was throughout large and rare, like that of a person who required to be reminded to breathe. The spleen was swollen, and formed a roundish tumour. The perspiration continued to be cold till the end; the paroxysms were on even days." It is to the description here given of the patient's breathing that I wish particularly to call attention. The words employed by Hippocrates are "Τούτῳ πνεῦμα διὰ τέλεος ἀραιὸν μέγα." Galen's commentary on the passage justifies the rendering which has been adopted. Further, we know that the word ἀραιός, when used by Hippocrates, whether in reference to the respiration or the pulse, invariably signifies "infrequent," "few in number," "with intervals."

This case is one of great interest The occurrence of accession of fever towards the evening of the third day, freedom from fever having been noted in the morning, with supervention of several unfavourable symptoms—in particular, great thirst, dry condition of the tongue, black urine, delirium, and coldness of the extremities—led Galen, in his Commentary, to remark that the fatal issue of the disease might have been anticipated. It is, however, in respect to the peculiar character of the breathing that the case of Philiscus acquires its chief interest, and it is in this particular that a resemblance is to be found between ancient and modern clinical examples. The attention of Hippocrates had been arrested by the peculiar character of the breathing which existed throughout the fatal illness of Philiscus. Surely it is matter of interest and for reflection that the respiration described by Hippocrates as ἀραιὸν μέγα, "rare and large," and to which Galen has attached the meaning "like a person who forgot for a time the need of breathing, and then suddenly remembered," or the "respiration throughout, like that of a person recollecting himself, was rare and large," has attracted great attention in quite recent times. The expression used by French writers, "besoin de respirer," corresponds in some measure to the meaning which is sought to be conveyed by the Greek words.

Laennec, the illustrious French physician, the modern discoverer of auscultation, he to whom we are indebted for the introduction of auscultation and for the great light which his discovery shed on the diagnosis and treatment of diseases of the chest, has rendered due credit to Hippocrates. To the Father of Medicine, indeed, and to Aretæus, among the ancients, Laennec confesses that he was alone indebted for any information on the subject which he has so signally made his own. He expressly states that Hippocrates practised immediate auscultation. "Hippocrate avait tenté l'auscultation immédiate;" and in proof of his having made trial of this means of diagnosis, he refers to the well-known passage in the treatise Περὶ Νουσῶν, τὸ Δευτέρον. "De Morbis," Liber Secundus, a work which there is good reason for believing, although not composed by Hippocrates himself, was written either by one or more of his contemporaries or by some of his immediate descendants in the school of Cos, in which it is made clear that Hippocrates fell into error in supposing his ability to distinguish between the presence of water and of pus in the chest by the peculiar sound heard on applying the ear. Under the designation of Hippocratic succussion, we possess, as is well known, a means of physical exploration of the chest which was practised by the Father of Medicine.

It would be very easy to multiply references to important and suggestive passages in the Hippocratic writings tending to establish yet more fully the truth of the statement that the Father of Medicine was enabled, by the exercise chiefly of his most remarkable powers of observation, to acquire a really wonderful amount of accurate information regarding the causes and progress of diseases, as well as the influence exerted by various remedies over them. Enough has, however, been stated to justify Sir William Hamilton in exalting the reputation and praise of Hippocrates. Was Sir William entitled to deprecate the medical practitioners of his own time, which he surely did when exclaiming, "Has the practice of medicine made a single step since Hippocrates?" For centuries after the Hippocratic epoch, it may truly be said that little or no advance in medicine was effected. Many learned and ingenious men no doubt did appear in the ranks of the profession, and by them the position which had been achieved for medicine by Hippocrates was, at all events, maintained. In ancient times by far the most renowned of these was Galen, who, embracing warmly the views of Hippocrates, was the first formally to expound and then systematically to formulate the doctrine of humoralism or humorism. It might be a sufficient answer to the query of Sir William Hamilton to signalise the discovery in modern days of vaccination and the introduction of sulphuric ether and chloroform as anæsthetics—the last mentioned, as the author of "Rab and his Friends" says, "one of God's best gifts to his suffering children." These were unknown to Hippocrates, and surely our possession of them indicates at least one step in advance. But we are able to point to the abandonment of many remedies altogether worthless which were used in ancient times, and to the introduction, as well as much more satisfactory employment, of others; while, owing to the remarkable and altogether indisputable progress which has been made in the prosecution, first of all, of the study of anatomy, then of physiology, and subsequently of pathology, we are justly entitled to conclude that the more advanced our knowledge of the minute structure of the body becomes, the more extensive our acquaintance with the function and uses of its several parts, and the more refined our understanding of the various morbid processes by which these are altered and destroyed, so much the more thorough and reliable will be our application and adaptation of the means of cure to the treatment of diseases. Any scientific practice of medicine before the physician had been able to acquaint himself with human anatomy was not to be expected; and it is truly marvellous that Hippocrates, Aretæus, Galen, and the Arabian physicians, notably Rhazes, were able to achieve so much, and to hand down to posterity a body of well-observed facts and careful deductions from these facts, wearing so much the aspect of science.

Medicine can, however, be said to have started on a scientific basis when Mundinus, early in the fourteenth century, applied himself with diligence to the dissection of the human body, and published a treatise on anatomy, "Anatomi Omnium Humani Corporis Interiorum Membrorum," which till the middle of the sixteenth century was the recognised text-book of the schools. The statutes of the University of Padua prescribed that all anatomical lecturers were to adhere to the literal text of the Bologna professor. Mundinus died in 1326, universally respected; and no advances in anatomical knowledge were made after his time till Berenger of Carpi published, in 1521, a commentary upon Mundinus. There succeeded Berenger, Vido Vidius, Jacob Sylvius, and the renowned Flemish anatomist Andreas Vesalius. Of the last-named, Hallam remarks that "if he was not quite to Anatomy what Copernicus was to astronomy, he has yet been said, a little hyperbolically, to have discovered a new world." * He was the first anatomist who ventured to emancipate himself, and that thoroughly, from the trammels of Galen, who, up to that time, had been regarded with an altogether blind veneration. Fallopius and Eustachius—two well-known names, not to be forgotten by anyone at all acquainted with anatomy—were the contemporaries, although younger, of Vesalius; and of the same period, or shortly subsequent, were Realdus Columbus, Arantius, and Fabricius ab Aquapendente, the discoverer of the valves in the veins and the instructor of our own immortal Harvey. The splendid discovery of the circulation of the blood was followed by that of the absorbent system, in which Asellius (a professor at Pavia), Rudbeck (a professor at Upsala), and Bartholini (a Dane) were chiefly concerned; while to Pecquet, a professor at Montpellier, belongs the credit of describing the thoracic duct and its uses. Other important anatomical discoveries, and discoveries also in physiology, were being made simultaneously, or shortly thereafter, in connection with which the names of Malpighi, Glisson, Wharton, Highmore, Richard Lower, Leuwenhœck, Ruysch, Valsalva, and many others start up.

While chemistry, about the same time, was advancing towards the dignity of a science, chiefly through the genius of our distinguished countryman, the Honourable Robert Boyle, there arose the sect of the so-called chemical physicians. Of this sect, the earliest was François Deleboe Sylvius, who was born at Hanau in Flanders in 1614, and, after a time, became professor of the practice of medicine at Leyden. The leading principle of the chemiatric physicians was that diseases owed their origin to derangement in a process of fermentation, which was constantly at work in the human body. While most of the maladies which were produced in this way arose from excess of acid, some were regarded as of alkaline origin. One eminent English physician embraced the doctrine of Sylvius. Thomas Willis was born in 1621, and in 1659 published his celebrated treatise entitled "Diatribæ duæ Medico-Philosophicæ; quarum prior agit de Fermentatione, altera de Febribus." The object of this work was to prove that in every organ of the body there existed its own special fermentation, and that diseases of every kind resulted from the disturbance of these fermentative processes. Willis was one of the earliest members of the Royal Society, and left behind him the character of an orthodox, pious, and charitable physician. The reputation of Willis, unquestionably a very able man, has been obscured by that of another English physician, his junior by only three years. The physician in question was Thomas Sydenham. He was born in Winford Eagle, in Dorsetshire in 1624. He has frequently been called the English Hippocrates, and, in truth, the appellation is deserved; for, like the illustrious Greek physician, the great aim he set before him was the cure of disease, and although possessing a mind which delighted in speculative inquiry, he never permitted the theories he formed and ably defended to interfere with his treatment. That was based on a rational empiricism, such as we have seen in the instance of Hippocrates; he carefully watched the operation of the remedies he employed, and from these he drew the indications for further guidance. Sydenham was humoral in his pathology, and he further agreed with Hippocrates in the doctrine of crisis, and the subsidiary view as to action and crasis. It was from Sydenham that the school of empirical physicians in England sprang—a term to be used, as Hallam has expressed it, "in a good sense," as denoting the regard its disciples had to observation and experience, or to the Baconian principles of philosophy.

Another school of medicine had arisen in Italy through the instrumentality of Giovanni Alfonso Borelli, a profound mathematician, who endeavoured to explain the operation of the various functions of the body on mechanical principles. His views and principles were, through the excessive zeal of his pupils, carried beyond their legitimate length. Of these, Lorenzo Bellini, of Florence and Pisa, was the chief. There were other eminent adherents of the iatro-mathematical school in Italy; while Pitcairne, Friend, and Mead, in their time, were in this country attached to it, and it secured the sympathies of the illustrious nosologist, François Boissier de Sauvages, in France, in the eighteenth century.

To the chemiatric and iatro-mathematical school there succeeded a third, of which Van Helmont was the founder. Embracing the views of the former to a certain extent, he made this important addition, that all the changes occurring in the body, whether arising spontaneously or produced by remedies, are determined by a specific agent inherent in the living system, to which he gave the name of Archeus. This archeus explained, in Van Helmont's opinion, all physiological actions, and accounted for the maintenance of health as well as the occurrence of disease. Rejecting the doctrines of the chemical and mathematical physicians, Stahl concentrated attention on what he denominated vital actions. He, too, referred these actions to a dominating principle; and the Anima of Stahl—so he named it—resembles, in some measure at least, the Archeus of Van Helmont. To Stahl belongs the great merit of having pointed out that, contrary to the prevalent opinions of the schools, the operations of the animal economy cannot be explained by either chemical or mechanical laws, that there exists something over and above these, and that something is of the nature of vital action. The anima of Stahl, however, was a hypothetical principle, and he signally failed to gain for his theory any general support. Hoffmann, his distinguished colleague in the University of Halle, and his rival, conferred a lasting benefit on science by pointing out that the actions which were ascribed by Stahl to the government of his "anima" were in reality determined by nervous influence.

---

* *Literary History*, vol. i., p. 467.

There is little need for reminding you of the triumphant discoveries in the nervous system which have been made since the time of Hoffmann — such discoveries as have rendered the names of Charles Bell and Marshall Hall in particular, but many others in lesser degree, famous. In no department of pathological inquiry is there at the present time exhibited a greater amount of zeal, or are important facts being more frequently brought to light, than in that pertaining to the nervous system. How signal our advance in treatment also, as determined by that which can alone with any certainty determine treatment: a sound diagnosis! We can distinguish functional and organic diseases of the brain, spinal cord, and nerves, and use our remedies in a way of which not only the ancient physicians, but many among the moderns, could not have dreamt.

The names of Stahl and Hoffmann, the German professors in Halle, of whom a few words have been said, are inseparably linked with that of the illustrious Dutch professor in the University of Leyden, Hermann Boerhaave. The aim of Boerhaave was essentially eclectic; he culled from the writings of his predecessors all that was valuable, and with these and the results of his own extended observation endeavoured to erect a system of medicine. His system was faulty in ascribing too little importance to the influence exerted by the brain and nervous system generally over the animal functions. The pathology of Boerhaave was as defective as his physiology; his explanation of morbid phenomena were more applicable to the body considered as an inert hydraulic machine than as an organised living and sentient system. Intellectually and morally distinguished, few greater men than Boerhaave have adorned our profession in any age or country. After his decease his reputation, which as a living teacher had been of the most exalted description, rather increased than declined. This result was due in great measure to the publication of commentaries on his works by two of his most distinguished pupils, Haller and Van Swieten. The former of these is justly considered as the father of modern physiology. The magnificent researches of Haller regarding development, growth of bone, and the circulation, deserve the praise and gratitude of posterity not more than the impulse of his ardent spirit and example in laborious inquiry, by which the zeal of his associates and successors was kindled. Of Haller's powerful opponent in the controversy regarding irritability and sensibility—Dr. Whytt—I can only make mention. Contemporaneously with Haller, and conferring benefits on the practice of medicine resembling those which Haller rendered to physiology, was William Cullen.

To Cullen we are largely indebted for the introduction into general use by medical men in this country of such remedies as the acid tartrate of potash, tartar emetic, hyoscyamus, and James's powder, or the pulvis antimonialis. Tartar emetic Cullen largely employed as an antiphlogistic, sometimes after blood-letting, and sometimes in place of that remedy. He had noticed something of the contra-stimulant action of antimony in the form of tartar emetic, described by Dr. Marryatt, of Bristol, in 1790, and afterwards so strongly insisted upon by Rasori, a professor in Pavia, and by others. A successor of Cullen, one of the most distinguished physicians in recent times, as he certainly was also one of the most benevolent of men—the revered Dr. Alison—when indicating the way by which, in his opinion, the further improvement in the art of medicine was likely to be effected, signalised the two following lines of inquiry: first, in the discovery of specifics which may counteract the different diseased actions of which the body is susceptible, as effectually as the chinchona counteracts the intermittent fever, citric acid the scurvy, or vaccination the small-pox; and, second, in the investigation of causes of disease, whether external or internal—*i.e.*, of the conditions under which either the vital action of the solids or the vital properties of the fluids of the body may become liable to deviation from their natural state. It will be readily admitted by all candid inquirers that, under the latter head, very signal advances have been made during the last half century. Look, for example, at the etiological investigations regarding continued fevers, and the bearing of these upon treatment, with which the names of Jenner, Stewart, Bartlett, Murchison, and Buchanan are so intimately connected. Again, consider the great advances in knowledge of parasitic diseases—the entozoa more particularly—and their appropriate treatment, for which we are largely indebted to Küchenmeister, von Siebold, Davaine, and Cobbold. Nothing more interesting or more remarkable in the line of therapeutics has recently appeared than the wonderfully successful treatment of hydatids of the lung by the internal administration of turpentine in the hands of Dr. Bird, of Melbourne, Australia.* This is a medicine in estimation of which, were time at my disposal, I could say much, having had occasion to watch its influence very closely when administered in cases of pulmonary gangrene and bronchial affections attended by copious expectoration of fetid pus. In these diseases I regard turpentine as an invaluable remedy.

Of specifics we still possess but few; while the desire to increase their number is not only legitimate, but is likely sooner or later to be gratified. Of the class of specifics no remedy better deserves the name than quinine. The potent action of quinine in intermittent fevers thoroughly justifies the application to it of the term specific; and it is to be noted that the curative action in question is to be seen not only in febrile disorders of the intermittent type, but in neuralgias which manifest a similar character. Many ingenious theories regarding the *modus operandi* of chinchona or quinine in these diseases have been advanced; but, up to the present time, we are compelled to admit that we are entirely ignorant respecting the method of action of a medicine in whose power we justly place the very highest confidence. The remarkable effects of quinine in reducing the temperature in pyrexia, and the still more remarkable influence of cold in the same way in hyperpyrexia, of which Dr. Wilson Fox has given some happy illustrations, are noteworthy facts in the recent history of therapeutics.

A remedy of marvellous power and usefulness, the virtues of which we are still only learning, is the iodide of potassium. This medicine was prepared soon after the discovery of iodine by Courtois in 1812, and has been chiefly employed as a deobstruent, alterative, and diuretic. I am satisfied that the diuretic properties of iodide of potassium deserve to be more widely recognised than is generally the case. Its specific action is seen in syphilitic periostitis, for truly the rapidity and completeness with which pain and swelling decline and disappear in instances of enlargements over the tibiæ and other bones in cases of secondary syphilis are not less remarkable than the readiness with which an attack of intermittent fever or neuralgia yields to quinine. The late Dr. Todd, of London, remarked: "If there is anything in addition to quinine which deserves the name of a specific, it is the iodide of potassium in syphilitic periostitis." Another remarkable action of this medicine is in aortic aneurism. Iodide of potassium, administered for the most part in tolerably large doses, in this terrible disease exerts a wonderful influence, not only in relieving the neuralgic pains, which are frequently so harassing, but in subduing the local pressure occasioned by encroachments of the aneurism, and in leading, apparently, to firm coagulation within the sac.

It is in the treatment of thoracic aneurism by iodide of potassium that physicians have learned the very remarkable tolerance of the drug manifested by sufferers from that disease. No reasonable suggestion has hitherto been offered regarding the *modus operandi* of iodide of potassium in aneurism. The influence it exerts on the progress of aneurism appears to have been discovered not only empirically, but by the merest hazard, writes Dr. Walshe: "in this point of view, the story of all our really valuable medicines is simply repeated" ("Diseases of the Heart," fourth edition, page 512). The names of Bouillaud, Nélaton, and Chuckerbutty are specially connected with the early employment of the iodide of potassium in the treatment of aneurism; while the profession is largely indebted to Dr. G. W. Balfour, of Edinburgh, for his patient investigation into the subject. (*Edinburgh Medical Journal*, 1868.)

Twenty years ago little was known regarding the virtues of bromide of potassium. If any standard work on the materia medica of that date be consulted, it will merely be found recorded of this salt that it is diuretic and cathartic, and, like the preparations of iodine, a powerful deobstruent and alterative. Its dose, moreover, is stated, in such works, at from three to twelve grains thrice daily. Since then, and more particularly within the last few years, bromide of potassium has rapidly advanced in professional estimation; and, at the present time, it may with confidence be affirmed that there are very few medicines which are more largely employed, and the use of which is attended by more signal benefits. As a calmative and hypnotic, bromide of potassium is largely confided in; but its specific operation in epilepsy is of the most striking description. "It is to be demonstrated, in my opinion," writes Dr. Russell Reynolds, "that there is something specific in the action of bromide of potassium in epilepsy." And the same author observes: "Bromide of potassium is the one medicine which has, so far as I know, proved of real service in the treatment of epilepsy." My own experience of the use of bromide of potassium in epilepsy has been of the most encouraging description. I have repeatedly witnessed cures, in the strictest sense, result from its employment.

---

* Dr. Bird had formerly used bromide of potassium, twenty grains, with one fluid drachm of tincture of kamela in infusion of sepentary, three times a day regularly. (On Hydatids of the Lung. Melbourne, 1874.) I am, however, assured by a recovered patient that, in the treatment of pulmonary hydatids, Dr. Bird now places great reliance on turpentine administered internally.

In the treatment of epilepsy by bromide of potassium, practitioners should be mindful of the rule upon which Dr. Reynolds insists, that the remedy "should not be discontinued in the treatment of a case of epilepsy because of its apparent failure, but that the dose should be gradually increased, and the exhibition of the drug most patiently carried on for a period of many months or even years)." Epilepsy is a disease which specially attracted the attention of the ancient physicians. It was termed *νόσος ἱεράς*, the sacred disease, by the Greeks; and Aretæus expressly mentions why the appellation "sacred" was given to epilepsy: "for more reasons than one," he remarks—"from the greatness of the evil, for the word *ἱερὸς* also means great, or because the cure of it is not human but divine, or from the notion that the disease occurred from the entrance of a demon into the man." Plato, in the "Timæus," ascribes the use of the term "sacred" to the circumstance of the head or brain being the part of the body affected in epilepsy. "When the phlegm is mingled," he says, "with black bile, and dispersed about the courses of the head, which are the divinest parts of us, and disturbs them in sleep, the attack is not so severe; but when assailing those who are awake, it is hard to be got rid of; and being an affection of a sacred part, is most justly called sacred." Hippocrates combated the notion entertained by his countrymen that epilepsy was peculiarly a sacred disease, one specially inflicted by the gods. In the treatise Περὶ Ἱερῆς Νούσου, he emphatically points out that the incomprehensible nature of the malady is no reason for concluding it to be divine, inasmuch as many other diseases, and notably the paroxysms of intermittent fevers, are just as much above the reach of the human understanding. The reader of the remarks on epilepsy in the pages of Hippocrates and Aretæus cannot fail to have his opinion of these great men enhanced; but he also cannot fail to reach the conclusion that the moderns, understanding the nature of convulsive diseases, their connection with altered conditions of the blood—with, for example, anæmia and uræmia—and their dependence at one time on central, at another on peripheral irritation of the nervous system, are infinitely better prepared for their treatment than they were; and this unquestionably holds true of epilepsy.

The use of the remedies we have been briefly reviewing has, in the first instance, been adopted either by mere accident or empirically; nor have we, on this account, any cause for feeling regret. We do not know in what the preservative power of vaccination consists; and yet millions of lives have already been saved by this precaution. A recent and very interesting example of the way in which therapeutical knowledge may be advanced is afforded by what has occurred in the Andaman islands. Dr. Dougall, a distinguished graduate of the University of Edinburgh, has apparently discovered that leprosy sores and other ailments attendant upon that disease can be cured by the aid of the Gurjon tree, which is very common in these islands. Take another disease known to the ancients, although its pathology, still to a considerable extent obscure, has been carefully investigated only in recent times—I mean diabetes; and regarding it, we may compare the treatment pursued by Aretæus, for example, and that which we now employ, with the result of feeling thoroughly assured that many steps have been taken in the right direction, and with signal advantage to suffering humanity, since the writings of the distinguished Cappadocian physician. I do not think the opinion unfounded that, owing to the recent advances in the knowledge of tubercular diseases, etiologically and pathologically, we may look forward with confidence to a decided gain in their efficient treatment; but even now may we not be said to possess in cod-liver oil a very potent means of modifying the progress of pulmonary tuberculosis? In the treatment of this disease and of other allied constitutional disorders, cod-liver oil was first employed in the Manchester Infirmary, chiefly by the elder Bardsley, after the commencement of the present century. Previously to that time, however, an oil obtained by ebullition with water from the fresh livers of several fishes, the ling and skate as well as the cod, had long been a domestic panacea in strumous affections and chronic rheumatism. Subsequently to its use in the Manchester Hospital, cod-liver oil was largely used in Germany; but, falling into disuse in this country, its restoration to professional and public favour has followed the publication of Dr. Hughes Bennett's recommendation of its virtues, in his excellent treatise on that subject. Sir Thomas Watson has very happily expressed the characteristic effect of the remedy in phthisis, when he says: "It is antagonistic to a much greater extent than any other drug of the consuming power of the disease." There are probably few medical men who have seen much of this sad malady who would hesitate to concur in the opinion of a very high authority—Dr. Williams—that cod-liver oil is more beneficial in the treatment of pulmonary consumption than any other agent, medicinal, dietetic, or regimenal, that has yet been employed. We may justly congratulate ourselves on the possession of cod-liver oil, but it becomes us to remember that the ancient physicians used oil inunction in phthisis. This is expressly stated by Aretæus, and he, as well as Hippocrates, lauds the use of milk in the same disease, preferring it to all other kinds of food. "For," says the former, "milk is pleasant to take, is easy to drink, gives solid nourishment, and is more familiar than any other food from childhood. In colour it is pleasant to see, as a medicine it seems to lubricate the windpipe, to clean as with a feather the bronchi, and to bring off phlegm, improve the breathing, and facilitate the discharge downwards. To ulcers it is a sweet medicine, and milder than anything else. If one will, then, only drink plenty of milk, he will not require anything else. For it is a great thing that in a disease milk should serve both for medicine and nourishment." In fevers Hippocrates did not allow milk, more particularly in such fevers as were attended by bilious discharges from the bowels. The modern practice is not in this very important particular in agreement with the ancient, the highest authorities, as, for example, Gairdner, Murchison, and Parkes—the last-mentioned on weighty theoretical grounds—considering milk the best food in fevers.

The recent progress of chemistry, physiology, and pathology, has naturally led to the establishment of an advanced school of therapeutics, from whose labours signal benefits may not only be anticipated for medicine, but have already been conferred upon it. To Dr. Lauder Brunton, for example, belongs the great merit of distinguishing accurately the therapeutic action of the nitrate of amyl from its physiological properties, and thereby of adding a useful remedy to our armamentarium. And so, also, to Dr. Fraser we are indebted for the elaborate investigations regarding the Calabar bean, which have resulted in a demonstration of its therapeutic value. Care must, however, be taken that the results of scientific inquiry and those of patient, oftentimes laborious, observation in the field of practical medicine running counter, do not interfere with the ultimate grand object of our profession—the healing of the sick.

We are not entitled to withhold remedies because we do not understand their exact nature, nor the minute changes they produce in the animal economy. Œsterlin has well expressed the attitude which, as practitioners of medicine, we are called upon to assume. "The patient requires our aid, and we must decide for or against the employment of a particular medicine, and upon the manner in which to employ it. If we possess sufficient experience, knowledge of the subject, and practical tact, we shall no doubt be able to do all for that patient which circumstances permit."

PUTTING DOWN QUACKERY.

A YEAR ago Mr. Disraeli informed the world that one among his many missions was to "put down ritualism." The phrase caught the ear of the people, and a vague sort of notion of some new crusade lighted for a few days the dull routine of political life. Any serious attempt to carry out the threat — which we by no means anticipate—would be the grandest aid to ritualism which an ingenious Jesuit could devise. It will be very little different with those who band themselves together and passionately agitate "to put down quackery." There is an unceasing succession of letters to this effect in the medical journals. Some one writes in last week's *Medical Press* "to suggest a mode whereby quackery may be abolished." The process is wonderfully easy according to him. A petition to Parliament, he thinks, "praying for its total and unreserved abolition," would settle the business. It is marvellous that a sane man could retain such a notion during the time occupied in writing that letter. It is still more marvellous that the editor of the paper should regard the suggestion as "both good and practical" in any respect whatever.

⁂

Another member of the immaculate profession, Dr. O'Neill, of Lincoln, eager to do something "to stop all this," sends to the *Lancet* an analysis of "Clarke's World-famed Blood Mixture or Purifier" by Dr. A. S. Taylor, with sundry comments. Iodide of potassium is the active ingredient in this compound, and the doctors labour to show the injury which a prolonged use of such a medicine may have on certain persons. On this subject we need not now enter; but the story is not complete until Mr. Clarke's version is given. The *Lancet* has since published a letter from that gentleman, in which the medical question is not discussed, but which at any rate removes from under Dr. O'Neill the lofty pedestal of disinterested virtue on which he had placed himself.

"On June 21 last," says Mr. Clarke, "I received from Dr. O'Neill an application for 44*l.* 2*s.* for alleged attendance on myself and my wife in 1864, 1865 and 1866. He at the same time forwarded to me two other bills against relatives of mine for which I was in no way responsible. His letter admitted that he never previously delivered the account, but stated he had forty-two visits down against me. I am not indebted to Dr. O'Neill, and I hold a bill of his dated Christmas, 1869, to which his receipt is attached, and which does not in any way allude to a previous charge. On June 27 my solicitor wrote to him denying any liability, but offering to refer the question either to arbitration or to a court of law, *and undertaking to contest the claim entirely on its merits*, and without raising any technical line of defence which was open to me, and which would at once have put an end to Dr. O'Neill's case. A request was at the same time made that the dates and particulars of the forty-two alleged visits should be supplied. No statement has up to this time been delivered, nor has Dr. O'Neill made any attempt to procure a decision on his claim. Instead of taking such a course he sends his letter and analysis to your paper.

"My mixture has been advertised for the last twelve years, during the whole of which time Dr. O'Neill has been residing in Lincoln. I have been told on many occasions that he has stated (though incorrectly) that the mixture was made from a prescription of his. But what I wish especially to bring to your notice is that not until Dr. O'Neill has been unsuccessful in his attempts to obtain 42 guineas from me does he make any effort 'to confer a great boon on the profession, and a greater boon still on the public at large,' by having my blood mixture analysed, and the analysis published. From the facts above detailed, your readers will be able to judge whether Dr. O'Neill has induced the *Lancet* to 'devote some of its valuable space' to the publication of his letter, in order to do 'great good to the public at large,' or whether he is not, under the pretence of rendering a professional and public service, really endeavouring to make the *Lancet* a means of revenging himself upon me for having declined to pay, what I unhesitatingly declare to be, an unfounded and unjust claim."

⁂

Certain of the lofty-minded American pharmaceutists are just now congratulating themselves on a scheme which is to be executed, and which they think is calculated to deal the death-blow to quackery there.

"Beyond their profuse advertising," says their prospectus, "the nostrum manufacturers have adroitly made the pharmacist and druggist their middlemen, by a lavish supply of *almanacs for gratuitous distribution.* The name and business card of the druggist are printed on the cover, by which these almanacs (issued and furnished solely in the interest of the nostrum-maker) carry the apparent indorsement of the distributor, and become, mainly through him, a most efficient advertisement of nostrums, as well as a stimulus to their demand and use."

To meet this plan of their enemies it is proposed to issue a counter-almanac, to be entitled, "The Popular Health Almanac," also for gratuitous distribution to the public, to present brief popular essays on the origin and absurdities of the nostrum traffic, and a statement of the composition of such popular patent medicines as have been analysed. Dr. Frederick Hoffmann is to be the editor, and with such good advertising as he is getting free he ought to make his idea a success.

It appears that druggists will have to pay for these almanacs, while the nostrum ones are supplied free. That consideration will perhaps check the flow of morality, but the "high-class" gentlemen who recommend the scheme do not require their disciples to renounce the sale of patent medicines until there are no purchasers. This is very good of them, but we can promise them that if they succeed in deposing the present powerful nostrum-nabobs, and thus provide a room swept and garnished, there shall be a grand exodus of the craft from European shores, and the last end of American pharmacy may be worse than its present condition.

LYCOPODIUM AND ITS PHARMACEUTICAL TREATMENT.

THE remarks which follow are condensed from a paper read before the Homœopathic Pharmaceutical Society at a meeting held at Leeds on June 24, by Mr. I. C. Thompson, of Liverpool.

Mr. Thompson said:—The appearance of the fine dusty sporules of lycopodium in mass is well known to all pharmacists, being extensively used as a harmless covering for pills, also as a puff powder on account of its extreme fineness; and on the Continent not unfrequently as a producer of artificial fire, from the quality it possesses of flaring up when ignited.

It has often struck me as a very anomalous and unexplained fact that the remedial virtues of the lycopodium sporules should be entirely ignored by the large dominant school of medicine, while by the smaller, but perhaps not less enlightened, body of homœopathic practitioners, lycopodium has from the commencement proved one of their most cherished remedies.

It was with a wish to solve if possible this incongruity that I have recently made a series of experiments with the aid of the microscope. A crude examination of lycopodium in the microscope, with a one-inch objective, shows it to be composed of an infinite number of minute hard straw-coloured particles, each about $\frac{1}{800}$th of an inch in diameter. Upon applying a quarter or one-fifth objective, these little particles will be seen to possess a definite regular form, each particle being a hard nut, rounded on one side, converging in triangular lines, with flattened sides, to an apex on the other side, and the whole surface covered with rounded knobs.

After pounding a small portion for a considerable time in a Wedgewood mortar, examination showed the nuts not to be perceptibly altered or fractured; but on repeating the process with a very minute quantity of the sporules in an agate mortar and pestle, many of the nuts were found to be completely fractured and their contents dispersed. Conjecturing that the contents of the nut, whatever its nature, contained the vital medicinal element of the lycopodium, the broken sporules, with the addition of a drop of water, were put under the microscope, when a large number of unmistakable oil globules were at once visible.

A similar experiment to the last was next made, but with the addition of ether to the ground sporules in place of water, the result being, as anticipated, that no oil globules were visible, being absorbed by the ether.

These experiments seem to prove conclusively that, as in the case of many seeds, the hard-cased sporules of the lycopodium are filled with a peculiar oil. If then, as surmised, it is to the action of this oil upon the system that the medicinal virtues of Lycopodium are to be ascribed, the apparent inconsistency respecting it between the two systems of medicine is at once explained—the nutty sporules as administered in their unaltered form by the adherents of the old school probably passing through the system without any assimilation having taken place; while, on the other hand, the homœopaths have by trituration and subsequent attenuation extracted the oil, and administered it in a form easily assimilable with the tissues of the body.

Having investigated thus far the true physical nature of the remedy, there remains to be determined the best means of most thoroughly extracting this oily matter, and the most suitable menstruum and form for its preparation and administration.

To this end, six months ago I prepared a series of mixtures (which are on the table before you) of the following fluids with a given quantity of the lycopodium sporules, viz., alcohol (absolute, rectified, 20 O.P., and proof), distilled water, glycerine, and ether, and heated each (the glycerine solution excepted) to boiling point for a few minutes. Upon then examining them under the microscope, no alteration in the form of the sporules was perceptible in any of the solutions, and now after six months I think you will see that with the single exception of the etherial preparation, in which a large proportion of the sporules are swelled out and broken, none of the solutions appear to have produced any visible change in the appearance of the sporules.

[Mr. Thompson here exhibited the different solutions, showing a drop of each under the microscope (one-fifth objective), confirming the above statement.]

As all of you are aware, the "British Homœopathic Pharmacopœia" recommends that lycopodium should be prepared in trituration; and, no doubt, the good results accruing from lycopodium (so frequently administered in the higher attenuations) are owing to the long-continued triturating process of the hard sugar crystals upon the shells of the sporules fracturing many of them, the milk sugar absorbing the contents.

But I was not a little surprised to find on microscopically examining the lower triturations how few comparatively of the sporules were broken, the greater number of them having escaped fracture altogether, and lying about among the sugar crystals quite uninjured.

[The 1 × trituration was then exhibited in a drop of water under the microscope, showing the entire sporules lying about amongst the sugar of milk crystals.]

The first centesimal trituration did not yield very much more satisfactory results; for, upon examining a little of it in a drop of water with the one-fifth objective as before, the separate sporules were still seen in many cases clustered together in small masses, a large number not being at all injured.

On examining the second and third centesimal triturations, however, it was found that the triturating process had thoroughly succeeded, for all the sporules appeared to be completely broken, and numbers of oil globules were floating about in the water.

The experiments upon these triturations of lycopodium were entirely confirmed by examining samples of the same triturations procured from other homœopathic chemists, all yielding precisely similar results.

Subsequently, I have been at some pains to practically ascertain if it be possible to prepare a *proper* 1 × trituration of lycopodium. It is not to be attained by making it according to the allotted time in the Pharmacopœia; but I find that if a small quantity (not more than 500 grains) be very well triturated for two hours, the 1 × trituration so prepared will, on microscopic examination with the one-fifth objective, show all the sporules to be thoroughly crushed. The first centesimal and higher triturations made up from this will be found to be intimately mixed, and minute subdivision completely accomplished.

It thus becomes evident that a very considerable amount of trituration is essential in order to thoroughly break the outer cuticle of the lycopodium sporules, and so to free the inside contents; the trituration form, therefore, certainly appears to be the best method of preparing and administering the drug in its lower attenuations. If made at all as a strong tincture, the previous experiments conclusively show that ether and not alcohol should be the vehicle used.

In this series of experiments I have merely endeavoured to make good a theory that will reconcile opposite statements respecting the therapeutic value of a particular substance. In so doing I would not be so presumptuous as to say that in no case will the lycopodium sporules, if taken in their ordinary form, affect the system either curatively or otherwise. This lies within the province of the medical practitioner to determine, and exactly opposite statements on the point have been made, the allopaths, as before stated, being satisfied in discarding lycopodium altogether from their Pharmacopœia as worthless.

With us, as disciples of Hahnemann, lycopodium ever holds a high place, owing, I believe, to our having (whether consciously or not) extracted from it by prolonged trituration a virtue unknown to those with whom quantity is an indispensable adjunct to success in treatment.

Trade Memoranda.

Mr. F. W. Fletcher, F.C.S., chemist, Hampton, was married on July 29 to Miss Champion, of Wallingford.

Mr. J. Richards, chemist, has been appointed distributor of stamps for Aberdare.

Mr. H. Simpson has sold his business at Chislehurst, and has commenced business at Clacton-on-Sea.

Mr. Wm. Houghton, of Fishergate, Preston, has sold his business to Mr. W. B. Brown, and has himself retired to Southport.

The business lately carried on by C. E. Perks & Co., wholesale perfumers, has been purchased by Samuel Perks, lavender farmer and distiller, Hitchin.

We observe that the competition in the manufacture of Condy's Fluid, &c., has resulted in a large reduction being made in the trade prices by the Condy's-Fluid Company. Fortunately the article is one that will bear considerable strain.

Mr. Chas. Thos. Ward, chemist, Albion Street, Southwick, eldest son of Mr. F. Ward, pharmaceutical chemist, 1 Lower Grosvenor Place, S.W., was married on August 5, to Isabella, third daughter of Mr. J. J. Shaw, 12a Victoria Square, Belgravia, S.W.

Mr. Robinson, of Pendleton, now supplies his well established corn solvent in stoppered bottles at 1*s.* 1½*d.* each in order to avoid leakage and for convenience of export buyers. The sixpenny corn solvent pencils are still supplied and are now mounted on a newly designed show card.

Mr. Perks' Lavender Fields. — The lavender fields of Hitchin have acquired a widespread fame, and at this time of the year present a beautiful appearance. A few days ago the Duke and Duchess of Leeds paid a visit to Mr. Perks' lavender farm; they were highly pleased with the sight and expressed in warm terms their gratification.

We have learned with much regret of the death of Mr. Alfred Burge, at Allahabad, N.W.P., India. Rather more than a year ago Mr. Burge bought the business of Messrs. Buncombe & Co., of that city. According to the information which has reached us he was killed on July 4 by the bursting of a soda-water machine. He leaves a widow and one child.

The Oldest Drug Business in England.—We have been told that the oldest drug business in this country is at Exeter, carried on until lately by Mr. Thompson, at 79 Fore Street, in that city, and recently sold to Mr. J. Ruston, formerly of Maryport. This is said to have been established more than 200 years ago. Mr. Ruston has sold his business at Maryport to Mr. Smith, of Tynemouth, and his soda-water business to Mr. Fielden, of Accrington.

The Proprietor of the "Daughter of the late John Bond's Marking Ink" announces that henceforth every bottle of that noted preparation will be sent out in bottles hermetically sealed, so that the continually recurring complaint of evaporation may be avoided for the future. John Bond's body, we believe, still lies mouldering in the grave, but his famous marking ink goes marching along to ever renewed glory.

The firm of Henry Turner & Co., homœopathic chemists, of London and Manchester, has been dissolved. Mr. Henry Turner will henceforth be the sole proprietor of the business at 77 Fleet Street, and the other partners, Messrs. Robert Hardy and Joseph John Watts, will retain the Manchester business. Until January 1, 1878, both firms will have the use of the title "Henry Turner & Co.," distinguishing themselves by adding their respective localities. After that date, we understand, that style will revert exclusively to the London firm.

Medical Gleanings.

The *New York Medical Record* states that two physicians in Quincy, Illinois, have been sued by a patient on whom they operated for hernia. The declaration states that the defendants conducted themselves in an ignorant manner by unnecessarily, wantonly, improperly and unskilfully performing a surgical operation on the body of the plaintiff, by cutting through the flesh of said plaintiff into the abdominal cavity, and through the left lower region of the abdomen; and in an unskilful manner the defendants took and removed from the cavity of the abdomen of plaintiff twenty-five feet of bowels, by reason of which ignorance *his recovery is greatly impeded!*

⁂

An American medical journal presents the line of type printed below to illustrate the fact that the eye has a tendency to enlarge the upper part of any object on which it looks:—

BBBBBBSSSSSSSSSXXXXXX888888888

All of these characters are made up of two parts of equal shapes. Look carefully at them, and you will perceive that the upper halves of the characters are a little smaller than the lower halves—so little that an ordinary eye will perhaps declare them of equal size. Now, turn the page upside down, and, without any careful looking, you will see that this difference in size is very much exaggerated; that the real top part of the letter is very much smaller than the bottom.

⁂

The *Medical Times* tells a humorous story of the late Sir Charles Locock, as an evidence of his powers of repartee. His great repute had induced certain vendors of quack medicine to advertise cough lozenges under the title of "Locock's Pulmonic Wafers," or "Locock's Cough Lozenges." This, of course, caused him some annoyance. One morning he met the Duke of Wellington in Hyde Park, who said, "Locock, I have a bad headache from taking your damned lozenges." "Well," said Sir Charles, "I might as well say that I am lamed by wearing your damned boots, for I wear Wellington boots." We may add that there are gentlemen in London quite prepared to supply anecdotes of this kind at a moderate price per score.

⁂

We take from the *British Medical Journal* this *résumé* of Professor Seegen's views on diabetes, as indicated in his work on the subject:—Healthy urine contains no sugar. All sugar in the urine, excepting its mere momentary presence from a passing cause, is an expression of a morbid process in the organism: one cannot distinguish, in its origin or its results, between diabetes mellitus as a disease and as a harmless increase of a physiological process. The sugar-excretion is the result of an anomalous conversion of the liver-glycogen into sugar; a direct excretion of the food-sugar does not take place. There are two forms of diabetes: one, in which only the glycogen formed out of the carbohydrates is converted into sugar; the other, in which the glycogen originating in the albuminates is also changed into sugar. A morbid condition of the central nervous system is in most cases to be traced as the cause of this anomalous process. Whatever the origin, the excretion of sugar is the cause alone of all the characteristic symptoms. There exists an intimate connection between excessive fat-formation and sugar-secretion. Corpulence, especially in the young, is often a forerunner of diabetes. The symptoms of diabetes fall into two groups; one, occasioned by the presence of sugar in the blood; the other, the result of defective nourishment. An hereditary disposition is by no means infrequent. The course of the disease is most favourable when there still exists some tolerance of amylaceous food: the second form runs much more quickly to a fatal termination. Cure of diabetes, so that starchy food may be freely eaten, is not observed. The prognosis depends on the form of the disease, the age of the patient, the power of living on a flesh diet, and the temperament. In the treatment of diabetes, the regulation of the diet is of first and primest importance. Among remedies, alkalies and alkaline mineral waters have proved themselves the best. The use of Carlsbad water has always a favourable influence on the symptoms of diabetes; the amount and the duration of the influence varies with the severity of the disease. Opium and its preparations have, among all known means, the most decisive influence on the excretion of sugar; but the duration of the action is only exceptionally an enduring one.

⁂

An assistant to several quack doctors of the vagrant class has written his confessions, and these have been paraded with considerable joy by the "regular" organs. The gentleman dates from Sherborne Workhouse, and addresses his letter to the Charity Organisation Society. He describes the quack fraternity, *himself included*, as rogues, rascals, and liars, a description which perhaps somewhat depreciates the value of the evidence offered. "My duty," says this indignant convert, "was to collect the ingredients, and I now solemnly declare that I got them ready made from the sheepfold or the rabbit warren. Those from the sheepfold had to be considerably reduced in size, after which they were coated with finely pulverised sugar and flour, and, after being dried to a proper consistency, were placed in pill-boxes, which are easily obtained, and then held forth to the dolts who were silly enough to listen to the stump doctor as 'American sugar-coated pills, purely vegetable, and warranted not to contain one particle of mercury, colocynth, or other deleterious poison, so extensively used by regular doctors.'" One of his masters he says took on an average 10*l.* a-week, paying him as assistant 1*l.* a-week and travelling expenses. Whatever may be the worth of this particular instance, it is not true as regards the practice of these travelling quacks as a body. Most country druggists can testify to the fact that these men are large consumers of drugs, and are often the possessors of very elaborate prescriptions, in which too they seem to have a personal and unquestioning faith.

Obituary.

Brammall.—June 19, Mr. Edward John Brammall, chemist and druggist, of Everton, Liverpool. Aged 52.

Burden.—July 28, Mr. Thomas Burden, pharmaceutical chemist, of Store Street, Bedford Square, London. Aged 58.

Burge.—July 4, at Allahabad, N. W. P., India, Mr. Alfred Burge, chemist and druggist, aged 32.

Cryer.—July 27, Mr. Samuel Cryer, chemist and druggist, of Lighthouse, Lancashire. Aged 68.

Holt.—July 11, Mr. Edward Charles Holt, chemist and druggist, of Altrincham. Aged 28.

Jennings.—June 4, Mr. John E. H. Jennings, pharmaceutical chemist, of Sheffield. Aged 61.

Lay.—June 1, Mr. William Robert Lay, chemist and druggist, of Norwich. Aged 51.

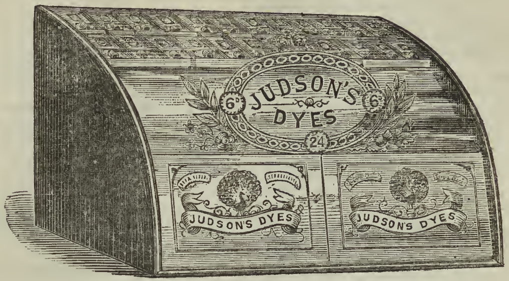
Medley.—July 12, suddenly, Mr. William Medley, pharmaceutical chemist, Derby, aged 49.

Rastrick.—July 17, Mr. John Alfred Rastrick, pharmaceutical chemist, of Woolwich. Aged 61.

Smith.—June 9, Mr. Thomas James Smith, pharmaceutical chemist, of Newark. Aged 23.

SHOW-CASES FOR JUDSON'S DYES.

Purchasers of twenty-four dozen of Judson's dyes can now receive the handsome counter show-case represented in the engraving. It is exceedingly well got up, and has a handsome effect on the counter. The words "Judson's Dyes" are engraved on the centre of the glass. Messrs. Judson supply the complete affair for 96*s.*, and we should also mention that they reckon 14 bottles to the dozen.



CONCENTRATED BEER.

A patent has recently been obtained for the manufacture of concentrated beer by a Mr. Lockwood, who has taken an active part in the introduction of the now well-known condensed milk into England. His process seems simple enough, and there does not seem any *primâ facie* reason why it should not be successful. The idea is to take beer or stout in its ordinary state, or at any stage of fermentation, and evaporate it in a vacuum pan, securing the alcohol as it distils over, and mixing that again with the semi-solid substance retained. In this manner it can be evaporated, occupying only about one-tenth of the space required by beer at present. The water can be mixed with the concentrated beer on its arrival, and the addition of a little yeast will complete the fermentation. Obviously a considerable saving in freight and vessels is ensured by this method, which must be considerably greater than the cost of condensing. We have no means of saying whether the flavour is affected by the process, but we should think it very likely would be. However, the alcohol will be present, and we suppose it is that, rather than the flavour, that most consumers desiderate.

DELICACIES FOR THE SICK.

We present below a few practical receipts which will doubtless prove of use to some of our readers:—

CHICKEN JELLY.

Half a raw chicken, pounded with a mallet, bones and meat together;
Cold water to cover it well;

Heat slowly in a covered vessel, and let it simmer until the meat is in white rags and the liquid reduced one half; strain and press through a coarse cloth; season to taste, return to the fire, and simmer five minutes longer; skim when cool. Give to the patient cold, with unleavened wafers.

ARROWROOT WINE JELLY.

One cup of boiling water;
Two teaspoonsful of arrowroot;
Two teaspoonsful of white sugar;
One tablespoonful of brandy or three of wine.

Proceed as before. An excellent corrective for weak bowels.

ARROWROOT JELLY.

One cup of boiling water;
Two teaspoonsful of Bermuda arrowroot;
One teaspoonful of lemon juice;
Two teaspoonsful of white sugar.

Wet the arrowroot in a little cold water, and rub smooth; then stir into the hot water, which should be on the fire and actually boiling at the time, with the sugar already melted in it. Stir until clear, boiling steadily all the time, and add the lemon. Wet a cup in cold water, and pour in the jelly to form. Eat cold with sugar and cream.

JELLY WATER.

One large teaspoonful of wild cherry or blackberry jelly;
One goblet of ice-water;

Beat up well. Excellent for fever patients or those suffering from summer complaint.

FLAX-SEED LEMONADE.

Four tablespoonsful of flax-seed (whole);
One quart of boiling water;
Juice of two lemons.

Pour the boiling water upon the flax-seed, and steep three hours in a covered vessel; sweeten to taste; if too thick add cold water with the lemon juice. Ice for drinking. It is admirable for colds.

APPLE TODDY.

Boil a large juicy pippin in a quart of water, and when it is broken to pieces, strain off the water; while it is still hot add a glass of old whisky, a little lemon juice, and sweeten to taste. Take hot at bedtime for influenza.

ICELAND MOSS JELLY.

One handful of moss, well washed;
One quart of boiling water;
The juice of two lemons;
One glass of wine;
One-quarter of a teaspoonful of cinnamon.

Stir the moss (after soaking it an hour in a little cold water) into the boiling water, and simmer until it is dissolved; sweeten, flavour, and strain into moulds. Good for colds, and very nourishing.

—*American Drug Circular.*

Correspondence

CIVIL SERVANTS IN A NEW ASPECT.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

DEAR SIR,—Will you kindly allow me space to draw the attention of pharmaceutists to a grievance which affects the very foundations of the trade. For my own part, I need not take up the subject, as I am about to retire from the business, but on behalf of other brother chemists who must remain ever dependent upon the avocation they have entered, I feel it my duty to publish the following case, which I can vouch for as correct.

At the June examination of the Pharmaceutical Society, a clerk in one of the Government public offices succeeded in passing the Minor and receiving his certificate. Accordingly, being well acquainted with him, I am able to say that he has never served an apprenticeship to a chemist, or otherwise had any opportunities of learning anything of the routine of a chemist's business. He has studied for this examination with an idea that the business is very lucrative, and therefore intends to open an establishment, employ an assistant, and attend himself after office hours (which are from 10 A.M. to 3 P.M.). This case, I consider, fully proves that the examinations are not a protection to trade, and if still carried on under the same principle we shall soon see a great many more enter under the same circumstances. I have heard of several other cases, and when I actually find one come under my notice I feel that the reports may not be without foundation. At any rate, if chemists value their interests, it is worth their while to make inquiries and seek a remedy.

At present our examinations are quite satisfactory in a theoretical form, though not practically. What is required is a retail establishment, where each candidate should attend for a few days after he has passed the examination as it now stands; that would be the best test whether a student was an "interloper" or a legitimate apprentice or assistant. Giving satisfaction on this point, he should then receive his qualification.

As to the examinations, it is easy to learn every subject, and those parts which are considered the practical tests, viz., pharmacy, materia medica, prescriptions, and dispensing, are more easily learned by the student than chemistry or botany. Prescriptions can be bought by the gross; dispensing can be taught well in a month. No one can deny that a teacher can qualify any student to pass the present examination without his (the student) having any previous knowledge of the subjects. Trusting others will take up this subject, of vital importance to all now in the trade and to the rising generation,

I am, sir, yours truly,
CHEMIST.

London: August 9, 1875.

CHEMISTS' GRIEVANCES.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

SIR,—I feel sure that most pharmacists would gladly see consigned to the history of pharmacy such letters as that of "A Victim"* (varieties of expression, as they are, of that suffering arising from incomplete representation of pharmacists and a partial method of applying pharmaceutical leverage), but the logical supplement to our legal status seems as far off as ever; therefore, as investors of brain and capital, and as precedents by time, we have a right to complain. If we consider business generally we must conclude that unsupported pharmacy does not pay; and yet, with fearless reorganisation, complete representation, and proper management, it might become at once a useful, paying, and honourable profession. It is to the interest of the public, and our duty to demand, that the responsible pharmacist should enjoy a respectable position, not contemptible for the want of dignified surrounding, as it now is, and must, I fear, remain so long as we look for help beyond ourselves.

We must remember those whom we tacitly accept as representatives are often wholly scientific men, cravers of martyrdom, censors of bread-winning; and those who perhaps most should represent us are but observers of the dead-letter of the law. Initiatory movements must arise from ourselves, the direction I have stated elsewhere.

I am, sir, yours obediently,
JOHN BARKER SMITH.

SYNONYMS.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

DEAR SIR,—Your correspondent, Mr. Mackay, in your issue for June 15, objects to two or three of my definitions. Will you kindly allow me space to prove that the errors, where such exist, are not mine.

1. Chloric Ether = Spirit of Chloroform.

If your correspondent refers to "Squire's Companion to the British Pharmacopœia" he will find, under Spiritus Chloroformi, the following words—"*Formerly called Chloric Ether, and of various strengths!*"

2. Hoffman's Anodyne Spirit = Spiritus Etheris.

Why strain at gnats? Sp. Eth. Co. is now obsolete and in its place we have the Spiritus Etheris. In this definition also Squire is with me.

3. Lenitive Electuary = Confection of Prunes,

Here a mistake decidedly occurs, but I think if my manuscript is referred to I shall be exonerated from all participation in it, for I find it in my notes as Confection of Senna.

I am, dear Sir, yours truly,
EDWIN P. WRIGHT.

37 Golborne Road, Upper Westbourne Park.
June 22, 1875.

Readers are requested to make the following corrections in the list of Synonyms published in our June number, and contributed by Mr. J. B. L. Mackay, of Ipswich:—

PAGE 203.

Column	Line	For	Read
1	1	Algarothis	Algarothi's
1	15	Bitter root	Bitter wort
1	22	Blackberry	Bleaberry
2	22	Uva ursum	Uva ursi
2	28	Euphorbica	Euphorbium
1	16 from foot	Craneshill	Cranesbill
3	2	Divale	Dwale
3	17	Omit glue, immediately below insert fish glue	=Isinglass
4	40	After Pil. Coloc. co. insert P. B.	
3	41	Gum thuis	Gum thuris
3	44	(Jarr)	(Junr.)
3	47	Henbane	Heberden's ink
4	49	Mixtura	Mistura
3	48	Hogbean	Henbane Hogbean
4	48 from foot	Carbonic acid	Crotonic acid
3	34	Liquor chloroformico	Liq. chloroformi co.
4	33	Dec. sargæ co.	Dec. sarzæ co.
4	21	Podophyllin	Podophyllum peltatum

PAGE 204.

Column	Line	For	Read
2	2	Tinct. rhub. co.	Tinct. rhei co.
2	21	Finally levigated	Finely levigated
1	18 from foot	Virgraim snakeroot	Virginian snake root

* Also in text, paragraph 4, clause within parenthesis, *for* former *read* latter.

---

* See THE CHEMIST AND DRUGGIST, June 15, 1875.

TERMS.—Announcements are inserted in this column at the rate of one halfpenny per word, on condition that name and address are added. Name and address to be paid for. Price in figures counts as one word.

If name and address are not included, one penny per word must be paid. A number will then be attached to the advertisement by the Publisher of the CHEMIST AND DRUGGIST, and all correspondence relating to it must be addressed to the "Publisher of THE CHEMIST AND DRUGGIST, Colonial Buildings, Cannon Street, London, E.C.," the envelope to be endorsed also with the number. The publisher will transmit the correspondence to the advertiser, and with that his share in the transaction will cease.

FOR DISPOSAL.

A quantity of good old vells. Yorath, Canton, Cardiff.

THE CHEMIST AND DRUGGIST, July, 1872, to June, 1873, inclusive. 35/94.

Squire's "Companion," ninth edition. Good as new. Cash offers. 34/95.

"Pharmaceutical Journal," from the commencement to 1867. What offers?

A zinc colza oil cistern (round), holds about 50 gallons. Offers wanted. 18/94.

Herbarium, all plants named, useful for the Minor, 2*s.* 6*d.* Tully, Rotherfield.

Paraffin tank, 30 gallons. What offers in cash? T. Hambridge, Midsomer Norton.

Hancock's Mixing Machine. Never used; 2*l.* 2*s.* size. Take 2*l.* Count, Buckley, Chester.

Blowpipe cabinet, by How; nearly new; cost 3*l.* 3*s.*; price 2*l.* F. R. Martin, Shaldon, Devon.

50 ozs. ferri et quinæ cit. Highest offer for whole or part. Samples, 2 stamps. F. Wheeler, Guildford.

Electro-magnetic machine for revolving small vacuum tubes; cost 50*s.*; price 30*s.* F. R. Martin, Shaldon, Devon.

Southall's Materia Medica Case, 12*s.* 6*d.*; Arnold's "Latin Prose," 1*s.* 6*d.* W. R., Post Office, Marske-by-the-Sea.

A Bargain. A female skeleton, cost in Paris 17*l.*; perfect; owner deceased; will take 40*s.* Griffith, Cornhill, Bridgwater.

Dows' 6-syrup ice-cream soda machine, in capital condition. A bargain, 20*l.* Cost 40*l.* Chemicus, 4 Harbour Street, Folkestone.

For sale, a case of Southall's materia medica specimens in good condition. Price, 20*s.*; cost 30*s.* A. J. Lett, 68 Broad Street, Worcester.

Walter's bed commode; Pulvermacher's galvanic belts, equal to new; half price. 60 lbs. gum olibani.; 12 lb. ext. gentian. Offers wanted. Marston, 105 London Wall.

Two 3-gallon show carboys; ½ doz. 2*s.* 9*d.* packets James' powders; ½ doz. Snooks' pills, 1*s.* 1½*d.*; ¼-doz. Wood's pills, 1*s.* 1½*d.*; ⅙-doz. Mrs. Johnson's Syrups, 2*s.* 9*d.* What offers. T. Hambridge, Midsomer Norton, Somerset.

Two 12-gallon pear-shaped show carboys, with mahogany stands and cut-glass stoppers, height 44 inches; also two handsome gilt glass tops for specie jars, diameter 10 inches. Offers wanted. Osborne, Moss Lane West, Manchester.

6-feet dispensing screen in three compartments, with shifting shelves and glass tablet on top, blue ground and gold letters, 65*s.*; 2½-feet bent glass case, similar to 43 Maw's Catalogue, with glass at back, cracked, 50*s.* H. A. Wellington, Freshwater, I.W.

"Lancet," from August, 1874, to June, 1875, 10*s.*; Druitt's "Surgery," 8th edition, 7*s.*; West's "Diseases of Children," 5th edition, 6*s.*; Tanner's "Practice of Medicine," little cut, 6th edition, 22*s.*; Erichssen's "Surgery," 6th edition, 21*s.* Address: E. Taylor, Chemist, Droitwich.

Pair 7-inch steel beam dispensing scales, glass pans, box ends, new, complete in mahogany box, with set grain and dram weights, 9*s.*; small pocket thermometer, in case, new, 8*s.*; L'Hote's soda-water apparatus, complete, new, 3*s.* 6*d.*; Maw's Moc Main truss, left, 27-inch, 5*s.* Andrews, Pembroke Dock.

Attfield's "Chemistry," 4th edition, 7*s.*; B. P. Additions, 6*d.*; "Selectæ ê Præscriptis," 16th edition, 2*s.* 3*d.*; Barber, 6th edition, 2*s.* 3*d.*; Steggall's "First Lines," 1*s.* 6*d.*; Cooley's "Latin Grammar," 2*s.* 3*d.*; Lindley's "Descriptive Botany," 6*d.*; Smith's "Arithmetic," 2*s.* W. Cooper, 114 Lambeth Walk, London, S.E.

Three show stands, for counter or window, polished pitch pine, each 43 inches long 23 inches high, five shelves each, 4½ inches broad; nearly new; cost 4*l.*; Maw's universal show case, cost 35*s.*; in good condition; also Pulvermacher's volta electric combined band; cost 40*s.*; only used once. No reasonable offers refused. John Wm. Longley, 73 North Street, Leeds.

Registers Pharmaceutical Chemists and Chemists and Druggists for 1872, 2*s.*; 1873, 2*s.* 6*d.*; 1874, 3*s.*, postage 6*d.* extra; 2 lbs. conf. aromat. pulv., P. L., 3*s.*; 3 lbs. potass fusa, in sticks, 1*s.* 6*d.* lb.; 3 lbs. pulv. cinnamon co., P. L., 3*s.* lb.; 5 lbs. pulv. calumbæ opt., 10*d.* lb.; 2 lbs. pulv. sacc. lactis, 1*s.* lb.; 2 lbs. pulv. uvæ ursi, 6*d.* lb.; 2 lbs. pulv. senna, 2*s.* lb.; 1 lb. pulv. anthemid., 2*s.* lb.; 30 lbs. gran. parad., 4*d.* lb.; 3 lbs. Rass. cornu cervi, 10*d.* lb.; 10 lbs. caccus cocti, 2*s.* 10*d.* lb.; sample sent of each on receipt of stamped envelope. 8/91.

12 dozen shop bottles; carboys, 2 to 10-gallon; 5-grain pill machine; a superior cover specie jar, 32 inches high; gold glass Prince of Wales's feathers, 70*s.*; a handsome ditto, 24 inches high; glass gold cover, 2, each 20 inches high; a 10 feet by 16 inches plate-glass facia; outside globe lamp and bracket, as Maw's fig. 9; 3 dozen ½ and 1-lb. jars, stone japanned covers; 15 white 4-lb. ointment jars; 5 fancy glass jars, as Maw's fig. 6; A and D fancy gold labels; a 3 feet bent plate-glass counter case, very superior; 4 velvet trays; a 5-feet plate glass, counter case, as Maw's 105; a 3 feet 9 inches bent plate, as Treble's No. 9, cheap; a 3 feet 6 inches bent plate case for counter; two toothbrush cases, 15 inches wide, 12 inches high, shelf at back, fitted inside with three glass shelves and tray, mirror back, all plate glass, 31*s.* 6*d.* each; a bent glass counter case, 30 inches long, 17 inches wide, 8 inches deep, velvet-lined, looking-glass back, 24*s.*; a ditto ditto, 3 feet long, 31*s.*; a plate-glass counter case; a very handsome Spanish mahogany soda-water stand, 3 feet 6 inches long, 2 feet wide, to stand in front of side counter; rack for 16 bottles, under very good carved truss leg, 3*l.*; several squares silvered plate glass, from 5 inches to 12 inches wide, and up to 60 inches long; 1 square, 75 inches by 32 inches, in black bead frame, 4*l.* 10*s.*; 1 ditto, 72 inches by 40 inches, 5*l.*; several others very cheap. E. Natali, 23 Colveston Crescent, Ridley Road, Kingsland.

To Chemists and Surgeons. To be sold, mahogany counter, 2 feet wide, 8 feet long, 3 feet deep. A nest of mahogany drawers containing 50. Ditto containing 33, gold labels and in good condition. 20 40-oz. tincture bottles, 36 20-oz. ditto, 5 10-oz. ditto, 4 4-oz. ditto, stoppered and gold-labelled. 18 40-oz. powder-bottles, 23 20-oz. ditto, 8 10-oz. ditto, 2 4-oz. ditto, stoppered and gold-labelled. 10 blue 40-oz. syrup bottles, stoppered and gold labels. 2 1-gallon show bottles in good condition. R. H., 71 Bank Street, Maidstone.

Attfield's "Chemistry," 7*s.* 6*d.*; Odling's "Chemistry," 4*s.*; Gregory's "Chemistry," 2*s.* 6*d.*; Miller's "Chemistry," 3 vols., 20*s.*; Miller's "Inorganic Chemistry," 7*s.* 6*d.*; Cooper's "Surgical Dictionary," 3*s.* 6*d.*; Holder's "Manual Dissection," 5*s.*; Quain's "Anatomy," 5*s.*; Bentham's "Flora," good as new, 35*s.*; Davis' "Obstetric Medicine," 4*s.*; Gregory's "Theory and Practice of Medicine," 4*s.*; Watson's "Practice of Physic," 2 vols., 5*s.*; Garrod's "Materia Medica," 3*s.* 6*d.*; Hallard & Garrod's "Materia Medica," 3*s.* 6*d.*; Piesse's "Perfumery," 6*s.*; Churchill's "Midwifery," plates, 6*s.* 6*d.*; Ranking's "Scrofulous Diseases," 3*s.*; Bushman's "Hydropathy," 1*s.*; Orr's "Practical Chemistry," 2*s.* 6*d.*; Vogel's "Anatomy," 5*s.*; Andrel's "Anatomy," 2 vols., 5*s.*; Paris' "Pharmacologia," 2 vols., 4*s.* 6*d.*; "Celsus," 3*s.* 6*d.* Send stamps, and books sent free. Letter only to M. P., 24 Whitcomb Street, Leicester Square, London, W.C.

3 ft. 10 in. long 11 in. wide 8 in. high bent plate-glass mahogany show case, as 100 Maw's list; 4 ft. 7 in. long 14 in. wide 10 in. high bent plate-glass mahogany show case, with trays, as 103 Maw's list; 3 ft. long 18 in. wide 7 in. high bent plate-glass mahogany ebonized show case, as 41 Maw's list; 2 ft. 8 in. long 14 in. wide 7½ in. high mahogany ebonized bent plate-glass show case, as 41 Maw's list; mahogany plate-glass show case, 3 ft. long 12 in. wide 7 in. high, as Treble's No. 10; two mahogany plate-glass show cases, 3 ft. long 8 in. wide 4½ in. high, as Treble's No. 10; mahogany plate-glass show case 2 ft. 8 in. long 20 in. wide 4½ in. high; mahogany ebonized plate-glass sponge case, as Maw's fig. 90; two soda water stands, as Maw's 62 and 63; upright mahogany show case and desk, as 39 Maw's; upright mahogany show cases, 3 various sizes, as Treble's 67; mahogany plate-glass dispensing screen 6 ft. 4 in. long, as 136 Treble's; upright mahogany show case, as 74 Treble's; mahogany plate-glass show case, as Treble's No. 11, 3½ ft. long; mahogany show stand, as Maw's 55; dispensing screen, as 155 Maw's; 9½ ft. long mahogany wall case; 5 ft. long mahogany wall case; 4 ft. 4 in. long mahogany wall case; two mahogany counter desks; 5 mahogany top counters, all sizes; six handsome specie jars, with royal arms, as fig. 1 Maw's; 9 ft. long nest mahogany gold-labelled shop drawers; 7 ft. 10 in. long nest mahogany gold-labelled shop drawers; 5 ft. 2 in. long nest mahogany gold-labelled shop drawers; 3 ft. 2 in. long nest mahogany gold-labelled shop drawers; two chemist's lamps with brackets; pair pillar counter scales, Maw's fig. 1; 18 handsome gold-labelled show jars, as fig. A and D Maw's list; ½-gallon glass percolator; one-gallon earthenware percolator; 12 one and two lb. gold-labelled lozenge jars, Maw's fig. 2; five oil cisterns 10, 30, 50, 80 gallon; 8 14-lb. tea canisters; two 24 5-gr. pill machines.—Lloyd Rayner, 333 Kingsland Road, London, N.

WANTED.

A dispensing screen; about 5 feet 6 inches or 8 feet long. 2/94.

Small size cigar case; cheap. W. F. Count, Buckley, near Chester.

Paraffin cistern, with tap; 40 gallons. Henzell, Chemist, Newcastle-on-Tyne.

A chemical cabinet or laboratory. State price and particulars. Griffith, Cornhill, Bridgwater.

Beesley's "Receipt Book," and Squire's "Companion," latest editions. Lowest price to S. Smith, New Swindon.

"Pharmaceutical Journal" for February and March, 1859, and February, 1866. John Wm. Longley, 73 North Street, Leeds.

The following back numbers of THE CHEMIST AND DRUGGIST are required to complete a set for a public library in America:—Nos. 2, 3, 4 (1859-60); 20, 28 (1861); 30, 35, 37, 38 (1862); 41 (1863); April, August (1865); October (1869); February, August (1870); July, December (1873). Any gentleman willing to supply the whole of the above is requested to send price to Edward Halse, 44A Cannon Street, London, E.C.

Druggists' Sundries.

DARK eyes show power. Anybody who has had his eyes well blacked will feel the full force of this remark.

"Do you know who I am?" asked a policeman of a fellow whom he had seized by the throat. "Not exactly, sir; but I fancy you are the malignant collarer."

JOSH BILLINGS defines a "thurer-bred bizziness man" as "wun that knows enuff about stealin' so that there kant ennybody steal from him, and enuff about law so that he can do his stealin' legally."

THIS is how a medical witness described a black eye:—"I found, on examination, a contusion of the integuments under the orbit, with extravasation of blood and ecchymosis of the surrounding cellular tissue, which was in a tumefied state, with abrasion of the cuticle."

THE following is one way to cut a bottle in two:—Turn the bottle as evenly as possibly over a low gaslight flame for about ten minutes; then dip steadily in water, and the sudden cooling will cause a regular crack to encircle the side at the heated place, allowing the portions to be easily separated.

THE following is a good recipe for raspberry vinegar:—Pour over one pound of bruised berries one quart of the best cider vinegar; next day strain the liquor on one pound of fresh ripe raspberries, bruise them also, and on the following day do the same. Do not squeeze the fruit, only drain the liquor thoroughly. Put the juice into a stone jar, and add sugar in proportion of one pound to a pint. When the sugar is melted place the jars in a saucepan of water, which heat; skim the liquor, and, after it has simmered for a few minutes, remove from the fire, cover, and bottle.

QUAINT EPITAPHS.

Well Corned.

Here lies a man who was troubled with bunions,
But the true cause of his death was eating raw onions.

A Sad Farewell.

Dear passer by, it is here I lie,
I died with a cancer in my right eye;
To all my friends I bid adieu.
A more dreadful death I never knew.

SUBSTITUTE FOR PERSIAN INSECT POWDER.—The *Industric Blatter* of Berlin recommends the use of the wild rosemary (*Ledum palustre*) as a substitute for the well-known Persian powder. This plant, whether fresh or dry, will kill lice, bedbugs, fleas, moths, beetles, and their larvæ, the maggots and blue-bottles, and probably other insects. It is also the best remedy for mosquito-bites, and the bites of all other insects. A little of the tincture of the plant applied to the bite not only relieves the intolerable itching, but also relieves the pain. If the tincture be mixed with glycerine and rubbed on the skin, it will drive the mosquitoes away. If this be a fact, the plant deserves special attention. It is very probable that it will be able to entirely supplant the expensive and frequently adulterated or counterfeit insect powder. It is most effective when green and in bloom, at which time it should be gathered.

TRADE REPORT.

THE sensational revelations in reference to financial transactions which have been spread before us during the past month, both in the "Collie" trial and in the Parliamentary Report on Foreign Loans, have been sufficiently plain reading to justify any amount of caution among that large class who would make haste to get rich by means of trying their luck in "city" speculations. In spite of this the present is not altogether the most dangerous time for enterprising investors. Shrewd judges think that with money so cheap as it now is, and with something like a lull in the speculative *furore*, this autumn must bring advanced prices for stocks which are reasonably sound and may prove a veritable harvest to patient investors. So if any of our readers are sure they know under which thimble the pea is concealed they may plunge with a fair hope of satisfactory results.

The markets during the past month have not exhibited much smartness. Actual failures in some cases, and weakness in others, have occasioned a depression which has reacted on all departments of commerce.

The opium market has shown considerable firmness, and large purchases of old stocks have occurred. It has been reported on excellent authority that the crop of Turkey is this year much above the average, but in certain quarters these statements are questioned, and the evident willingness of experienced men to back their opinion by buying is an undeniable argument.

For new first quality soft the quotations are lower than they have been for years, and the price seems to have equalised itself both at New York and here, being respectively 22*s.* and 20*s.* The former price is probably 1*s.* higher than obtainable, whilst the lower qualities follow in sequence from 19*s.* best druggist's to 12*s.* or 11*s.* here. Possibly the Persian opium thrown upon this market may have its influence in keeping the price low, as the quantity of morphia it contains will always command a respectable figure, more especially now that the American standard has been raised from 7 to 9 per cent. of the alkaloid. Consequently Persian is almost bound to find a sale.

Virgin scammony will be a full average crop, and is selling freely at lower prices.

Virgin otto: new is dearer to the extent of 2*s.* per oz., but new crop usually is highest at first.

The quality of some of the drugs offered at public sales in many instances is not what it should be. Of course there will always be some packages more or less damaged in transit, and it requires a large amount of commercial morality in a merchant to consign goods to the dust-heap or fire so long as a chance remains of some enterprising wholesale dealer utilising them. Notably this is true with reference to certain packages of ipecacuanha in the sale on Thursday last. These were so mouldy and rotten that the morality of giving a drug price for them at all was very questionable. However, they realised half the rates of sound.

Really fine qualities of Tinnevelly senna have not been obtainable lately, and better prices have been secured for the moderate at sale. One lot on Thursday sold for 1*s.* 4*d.* First class cod liver oil is also scarce, and fetches extreme figures. Balsam copaiba is offered more freely but at firm price, a new parcel from Manaos not materially affecting the value. New Roman chamomiles are offering freely, and though fears were entertained that the colour would not be good, yet market price for best white is only 70*s.* New Russian cantharides: present quoted price 5*s.*, but cheaper in private hands. Price will not, however, be so low as four years ago, since when they have steadily advanced.

French rhubarb in small pieces, very much like English, shows itself occasionally, and ought to have a better position, as the pieces are just a proper size for retail, with a nice bright fracture, and price all right, 1½*d.* being the highest bid.

The 18*s.* asked at previous sales and 11*s.* on Thursday last for jaborandi might as well have been pounds or pence for all the interest taken in the article by should-be purchasers. That last offered was certainly not the same kind of herb as at first, and, therefore, naturally enough the wholesale trade declined to buy. Dr. W. Craig's note on this drug, read or tendered to be read at the British Medical Association may assist business. It has hitherto been all in the hands of one broker, and through him possibly from one merchant, and these gentlemen may not be accurately acquainted with the characteristics of the genuine article.

Iodine appears to have gone holiday-making, nothing having publicly transpired with regard to it for a month, with the exception of two cases bought in at 7½*d.* Quinine, since the forced sales at much reduced prices of foreign makes held in stock here, has advanced about 1*s.* for English manufactures, owing, it is said, to the unassuring aspect of political affairs in cinchona growing districts. This can be taken for what it is worth. Quicksilver is worth only 2*s.* 6*d.* per lb. on the market, and may drop much lower, stocks being large both here and in America. The ring appears to be broken, as exports either way, as price may rule, are now taking place. American oil of peppermint, which of course no druggist uses pharmaceutically, has had a little game of its own lately. The price went up to 20*s.* very recently, and barely obtainable at that; same thing can now be had for 17*s.* or 17*s.* 6*d.* American borax is now offering in large quantities, and has affected the value very much, 50*s.* not being offered, and lower figures taken. A new claimant for market honours, in "Cocoa Nut Vinegar," has put in an appearance. It is a very agreeable thing of its kind, and offered so very cheap that it must make its way.

The chemical market continues *in statu quo*. Extremely low prices and universal discontent among makers, with no effort to improve the tone by limiting the manufacture, are the characteristics of this branch. Citric acid is much cheaper, and reports from Italy indicate almost a stagnation of orders for juice. Our correspondent, however, thinks there are signs of an American demand looming in the distance.

Olive oil has experienced quite a gay time in quotations. Bad reports of the Italian crop sent the price up at one moment 4*l.* per ton; but this was not maintained. Still the position of the article is much firmer and it may advance. Spanish reports are on the whole very favourable.

Petroleum looks much stronger; there is a good demand and sellers for forward delivery are very firm.

TASTELESS CASTOR OIL.—A fair young lady in Waterbury, according to the Tennessee *Pharmacal Gazette*, went to a drug-store, and told the man to fix up one dose of castor oil, and to mix it with something to take the taste away. The man told her to wait. In a few minutes he asked her if she would like a glass of soda. She accepted the invitation and drank the beverage. Presently she asked the roller of pills why he didn't give her the oil. The man smiled triumphantly, and said: "Madam, you have taken it. I mixed a fearful dose with that soda." She turned pale, sank into a chair, and gasped: "Immortal Jove! I wanted it for my mother-in-law."

Monthly Price Current.

The prices quoted in the following list are those actually obtained in Mincing Lane for articles sold in bulk. Our Retail Subscribers must not expect to purchase at these market prices, but they may draw from them useful conclusions respecting the prices at which articles are offered by the Wholesale Firms.

CHEMICALS.

	1875.					1874.				
	s.	d.		s.	d.	s.	d.		s.	d.
ACIDS—										
Acetic .... per lb.	0	4	to	0	4½	0	4	to	0	0
Citric .... ,,	3	0	..	0	0	4	3	..	4	4
Hydrochlor...... per cwt.	5	0	..	7	0	4	0	..	7	0
Nitric .... per lb.	0	5	..	0	5½	0	5	..	0	5½
Oxalic .... ,,	0	5¾	..	0	0	0	6½	..	0	7
Sulphuric ...... ,,	0	0¾	..	0	1	0	0¾	..	0	1
Tartaric crystal.. ,,	1	6½	..	1	6¾	1	7½	..	0	0
powdered ,,	1	6¾	..	0	0	1	7½	..	0	0
ANTIMONY ore ...... per ton	260	0	..	300	0	200	0	..	240	0
crude .. per cwt.	40	0	..	0	0	0	0	..	0	0
star...... ,,	59	0	..	0	0	47	0	..	48	0
ARSENIC, lump ...... ,,	30	0	..	0	0	20	6	..	0	0
powder.... ,,	14	0	..	0	0	10	0	..	0	0
BRIMSTONE, rough ...per ton	150	0	..	0	0	127	6	..	145	0
roll .. per cwt.	10	0	..	0	0	9	9	..	10	0
flour.... ,,	12	6	..	14	0	11	6	..	12	6
IODINE, dry ....per oz.	0	7½	..	0	0	0	10	..	0	10½
IVORY BLACK, dry .. per cwt.	8	6	..	0	0	8	6	..	0	0
MAGNESIA, calcined..per lb.	1	6	..	0	0	1	6	..	0	0
MERCURY ....per bottle	200	0	..	0	0	440	0	..	0	0
MINIUM, red ...... per cwt.	24	6	..	25	0	25	0	..	25	3
orange .. ,,	37	0	..	0	0	37	0	..	0	0
PRECIPITATE, red . per lb.	4	5	..	0	0	6	9	..	0	0
white ,,	4	4	..	0	0	6	8	..	0	0
PRUSSIAN BLUE .. ,,	0	0	..	0	0	0	0	..	0	0
SALTS—										
Alum ....per ton	150	0	..	157	6	170	0	..	175	0
powder...... ,,	170	0	..	0	0	190	0	..	0	0
Ammonia:										
Carbonate...... per lb.	0	7	..	0	7¼	0	7	..	0	0
Hydrochlorate, crude, white .... per ton	640	0	..	0	0	650	0	..	0	0
British (*see* Sal Am.)										
Sulphate........ per ton	360	0	..	370	0	335	0	..	345	0
Argol, Cape ......per cwt.	88	0	..	95	0	87	6	..	97	6
Red........ ,,	80	0	..	93	0	76	0	..	82	6
Oporto, red. ,,	34	0	..	36	0	28	0	..	32	0
Sicily ...... ,,	60	0	..	62	6	52	6	..	57	6
Ashes (*see* Potash and Soda)										
Bleaching powd...per cwt.	8	9	..	0	0	11	9	..	12	0
Borax, crude...... ,,	40	0	..	60	0	45	0	..	70	0
British refnd. ,,	53	0	..	0	0	70	0	..	0	0
Calomel ....per lb.	3	11	..	0	0	6	3	..	0	0
Copper:										
Sulphate ....per cwt.	25	6	..	26	0	25	6	..	26	6
Copperas, green..per ton	65	0	..	70	0	65	0	..	70	0
Corrosive Sublimate p. lb.	3	3	..	0	0	5	5	..	0	0
Cr. Tartar, French, p. cwt.	113	0	..	114	0	112	0	..	0	0
brown ,,	92	6	..	98	0	97	0	..	100	0
Epsom Salts ....per cwt.	6	6	..	0	0	5	9	..	6	6
Glauber Salts .... ,,	6	6	..	0	0	4	6	..	5	9
Lime:										
Acetate, white, per cwt.	11	0	..	20	0	14	0	..	21	0
Magnesia: Carbonate ,,	42	6	..	45	0	42	6	..	45	0
Potash:										
Bichromate ....per lb.	0	6½	..	0	0	0	6½	..	0	0
Carbonate:										
Potashes, Canada, 1st sort ......per cwt.	28	6	..	0	0	35	0	..	35	6
Pearlashes, Canada, 1st sort ......per cwt.	36	6	..	39	0	0	0	..	0	0
Chlorate ......per lb.	0	9	..	0	0	0	10½	..	0	11
Prussiate .... ,,	1	1	..	0	0	0	11	..	1	0
red..... ,,	3	2	..	3	3	2	10	..	2	11
Tartrate (*see* Argol and Cream of Tartar)										
Potassium:										
Chloride......per cwt.	7	0	..	0	0	7	0	..	0	0
Iodide ....per lb.	9	6	..	0	0	12	0	..	0	0
Quinine:										
Sulphate, British, in bottles ......per oz.	7	0	..	0	0	8	0	..	0	0
Sulphate, French ,,	6	6	..	0	0	7	10	..	0	0
Sal Acetos ......per lb.	0	8½	..	0	10	0	10½	..	0	0
Sal Ammoniac, Brit. cwt.	44	0	..	45	0	44	0	..	45	0
Saltpetre:										
Bengal, 6 per cent. or under ......per cwt.	18	0	..	18	9	19	0	..	20	0
Bengal, over 6 per cent. per cwt.	17	0	..	17	6	0	0	..	0	0
British. refined ,,	22	3	..	23	3	25	9	..	26	6
Soda: Bicarbonate, p. cwt.	12	9	..	13	0	15	9	..	0	0
Carbonate:										
Soda Ash ..per deg.	0	2⅞	..	0	0	0	2¼	..	0	0
Soda Crystals per ton	100	0	..	0	0	115	0	..	0	0
Hyposulphite, per cwt.	0	0	..	0	0	0	0	..	0	0
Nitrate ......per cwt.	11	3	..	11	9	11	3	..	11	9
SUGAR OF LEAD, White cwt.	44	0	..	0	0	47	0	..	48	0
SUGAR OF LEAD, Brown, cwt.	32	0	..	33	0	32	6	..	33	0
SULPHUR (*see* Brimstone)										
VERDIGRIS .... per lb.	1	1	to	1	5	1	1½	to	1	6
VERMILION, English ,,	3	4	..	0	0	5	10	..	0	0
China ,,	0	0	..	0	0	5	6	..	0	0

DRUGS.

	1875.					1874.				
	s.	d.		s.	d.	s.	d.		s.	d.
ALOES, Hepatic ....per cwt.	60	0	..	160	0	80	0	..	200	0
Socotrine .. ,,	80	0	..	205	0	102	6	..	240	0
Cape, good.. ,,	34	0	..	37	6	38	0	..	40	0
Inferior .... ,,	23	0	..	32	0	30	0	..	37	0
Barbadoes .. ,,	60	0	..	180	0	65	0	..	190	0
AMBERGRIS, grey........oz.	40	0	..	60	0	0	0	..	0	0
BALSAM—										
Canada............per lb.	1	9	..	0	0	2	3	..	0	0
Capivi .... ,,	2	10	..	0	0	2	8	..	2	9
Peru .... ,,	6	0	..	6	3	8	0	..	8	1
Tolu.............. ,,	5	0	..	0	0	2	9	..	3	0
BARKS—										
Canella alba......per cwt.	16	0	..	28	0	16	0	..	27	0
Cascarilla .... ,,	19	0	..	22	6	18	6	..	31	0
Peru, crown & grey per lb.	0	8	..	2	6	0	10	..	2	7
Calisaya, flat ,,	2	0	..	5	4	2	10	..	4	4
,, quill ,,	2	0	..	5	4	2	9	..	4	5
Carthagena ,,	0	6	..	1	8	0	8	..	2	0
E. I. .... ,,	1	0	..	5	0	0	7	..	5	0
Pitayo ...... ,,	0	4	..	1	9	0	4	..	2	0
Red .... ,,	1	6	..	4	9	1	3	..	3	10
Buchu Leaves........ ,,	0	1¼	..	1	1	0	2	..	1	0
CAMPHOR, China ..per cwt.	70	0	..	0	0	70	0	..	72	6
Japan .. ,,	0	0	..	0	0	72	6	..	75	0
Refin. Eng. per lb.	1	0½	..	0	0	1	1	..	0	0
CANTHARIDES........ ,,	3	0	..	5	3	2	3	..	5	0
CHAMOMILE FLOWERS p. cwt.	35	0	..	63	0	50	0	..	84	0
CASTOREUM ....per lb.	6	0	..	24	0	4	0	..	20	0
DRAGON'S BLOOD, lp. p. cwt.	85	0	..	230	0	105	0	..	255	0
FRUITS AND SEEDS (*see also* Seeds *and* Spices).										
Anise, China Star per cwt.	110	0	..	115	0	130	0	..	140	0
Spanish, &c. ,,	30	0	..	35	6	12	0	..	27	0
Beans, Tonquin....per lb.	1	5	..	1	9	1	6	..	2	4
Cardamoms, Malabar good .... ,,	3	6	..	5	3	4	3	..	4	10
inferior.... ,,	2	0	..	3	5	2	0	..	3	9
Madras.... ,,	2	6	..	3	0	2	0	..	3	6
Ceylon .... ,,	5	8	..	5	10	4	0	..	4	10
Cassia Fistula....per cwt.	12	6	..	15	0	20	0	..	21	6
Castor Seeds .... ,,	10	0	..	10	6	5	0	..	10	0
Cocculus Indicus ,,	13	3	..	15	0	14	0	..	17	0
Colocynth, apple ..per lb.	0	6	..	1	0	0	4	..	0	10
Croton Seeds ....per cwt.	41	0	..	0	0	42	0	..	44	0
Cubebs.......... ,,	25	0	..	27	0	24	0	..	25	0
Cummin .... ,,	15	0	..	20	0	15	0	..	22	0
Dividivi .... ,,	12	0	..	15	0	11	0	..	15	0
Fenugreek ...... ,,	8	0	..	16	0	8	0	..	16	0
Guinea Grains .. ,,	23	0	..	24	0	25	0	..	26	0
Juniper Berries ,,	10	0	..	11	6	9	0	..	10	6
Nux Vomica.... ,,	8	9	..	15	0	9	0	..	15	0
Tamarinds, East India ,,	20	0	..	30	0	10	0	..	13	0
West India ,,	12	0	..	16	0	11	0	..	17	0
Vanilla, large .... per lb.	60	0	..	70	0	68	0	..	86	0
inferior ,,	50	0	..	59	0	45	0	..	67	0
Wormseed per cwt.	0	0	..	0	0	0	0	..	0	0
GINGER, Preserved, per lb.	0	6	..	0	7	0	5½	..	0	8
HONEY, Chili .... per cwt.	31	0	..	45	0	32	0	..	46	0
Jamaica ,,	38	0	..	50	0	33	0	..	45	0
Australian ,,	0	0	..	0	0	38	0	..	48	0
IPECACUANHA .... per lb.	4	2	..	4	4	3	4	..	3	10
ISINGLASS, Brazil.. ,,	2	9	..	5	0	2	10	..	5	4
Tongue sort ,,	3	0	..	5	6	3	2	..	5	5
East India ,,	1	0	..	5	0	1	3	..	4	8
West India ,,	4	5	..	4	11	4	9	..	5	1
Russ. long staple	13	0	..	16	0	8	6	..	13	0
,, inferior	0	0	..	0	0	4	0	..	8	0
,, Simovia	3	0	..	4	0	3	3	..	5	0
JALAP, good...... ,,	0	7	..	0	8	0	8	..	0	9
infer. & stems ,,	0	5½	..	0	6½	0	6	..	0	8
LEMON JUICE .... per degree	0	2	..	0	2¼	0	2¾	..	0	0
LIME JUICE........per gall.	1	6	..	2	0	2	4	..	2	6
LIQUORICE, Spanish per cwt.	55	0	..	97	0	40	0	..	70	0
Liquorice Root ,,	20	0	..	31	0	11	0	..	16	0
MANNA, flaky ......per lb.	4	6	..	6	0	2	6	..	3	0
small ...... ,,	1	6	..	1	9	1	2	..	1	5
MUSK, Pod..........per oz.	13	0	..	47	0	20	0	..	41	0
Grain........ ,,	42	0	..	56	0	42	6	..	55	0
OILS (*see also separate list*)										
Almond, expressed per lb.	1	1	..	0	0	0	11	..	0	0
Castor, 1st pale.... ,,	0	4½	..	0	5	0	5	..	0	5¾
second .... ,,	0	4	..	0	4½	0	4¼	..	0	5
infer. & dark ,,	0	3½	..	0	0	0	4	..	0	4¼
Cod Liver ...... per gall.	3	6	..	6	0	3	10	..	6	3
Croton .... per oz.	0	2½	..	0	0	0	3	..	0	4
Essential Oils:										
Almond ....per lb.	25	0	..	0	0	25	0	..	26	0
Anise-seed ...... ,,	10	6	..	0	0	8	6	..	0	0
Bay ....per cwt.	0	0	..	0	0	65	0	..	70	0
Bergamot ...... per lb.	10	0	..	25	0	10	0	..	23	0
Cajeput......per bottle	2	8	..	2	10	2	3	..	2	5
Caraway........per lb.	9	0	..	0	0	5	3	..	6	0
Cassia .... ,,	4	4	..	4	5	4	6	..	4	9
Cinnamon ......per oz.	1	0	..	6	6	0	8	..	7	6
Cinnamon-leaf .. ,,	0	2	..	0	3	0	2⅛	..	0	5
Citronelle ...... ,,	0	1¾	..	0	0	0	1⅞	..	0	0
Clove ....per lb.	9	6	..	0	0	9	6	..	0	0
Juniper .... ,,	1	10	..	2	6	1	3	..	2	4
Lavender ......per lb.	2	0	..	5	6	1	10	..	5	0
Lemon.......... ,,	7	0	..	11	0	7	0	..	14	0

	1875.		1874.	
	s. d.	s. d.	s. d.	s. d.
Essential Oils, *continued*:—				
Lemongrass ....per oz.	0 2½	0 0	0 2¾	0 0
Neroli .... ,,	0 4	3 0	0 4	0 6
Nutmeg .... ,,	0 7	0 0	0 7	0 8
Orange..........per lb.	6 0	9 0	8 0	10 0
Otto of Roses....per oz.	13 0	25 0	15 0	22 0
Patchouli ...... ,,	2 0	3 6	2 9	4 0
Peppermint:				
American ....per lb.	20 6	21 6	20 6	21 6
English ...... ,,	35 0	36 0	29 0	32 0
Rosemary ...... ,,	1 4	1 10	1 4	1 10
Sassafras ...... ,,	2 3	2 6	2 3	3 0
Spearmint ...... ,,	12 0	19 0	6 0	18 0
Thyme.......... ,,	1 9	2 0	1 9	2 0
Mace, expressed ..per oz.	0 7½	0 10	0 3	0 3½
Opium, Turkey ......per lb.	29 0	31 0	32 0	35 0
inferior ...... ,,	22 0	35 0	14 0	29 0
Quassia (bitter wood) per ton	200 0	300 0	70 0	85 0
Rhubarb, China, good and fine ....per lb.	2 6	4 8	5 6	6 3
Good, mid. to ord. ,,	0 9	1 11	1 0	5 4
Dutch trimmed ,,	0 0	0 0	0 0	0 0
Russian .... ,,	0 0	0 0	0 0	0 0
Roots—Calumba..per cwt.	20 0	24 0	12 0	36 0
China .... ,,	18 6	20 0	18 0	20 0
Galangal.......... ,,	19 0	22 0	20 0	25 0
Gentian .... ,,	23 0	24 0	17 0	19 0
Hellebore .... ,	30 0	33 0	30 0	33 0
Orris .... ,,	26 0	75 0	30 0	70 0
Pellitory.......... ,,	38 0	39 0	38 0	39 0
Pink..............per lb.	0 10	1 3	1 0	1 3
Rhatany.......... ,,	0 4	2 0	0 5	0 11
Seneka............ ,,	3 5	3 6	3 0	3 6
Snake .... ,,	0 10	1 0	1 4	1 9
Saffron, Spanish .. ,,	18 0	23 0	22 0	26 0
Salep ....per cwt.	0 0	0 0	170 0	200 0
Sarsaparilla, Lima per lb.	0 0	0 0	0 6	0 9
Para.............. ,,	0 0	0 0	1 0	1 3
Honduras .... ,,	1 3	2 0	1 3	1 7
Jamaica .... ,,	2 4	2 10	1 6	2 4
Sassafras ....per cwt.	0 0	0 0	13 0	15 0
Scammony, Virgin ..per lb.	25 0	36 0	25 0	30 0
second & ordinary ,,	7 0	24 0	8 0	24 0
Senna, Bombay .... ,,	0 1	0 4	0 1	0 5
Tinnivelly .... ,,	0 1½	0 10	0 1½	1 0
Alexandria........ ,,	0 7	2 6	0 3½	1 5
Spermaceti, refined ,,	1 4	0 0	1 3	1 4
American .... ,,	1 2	0 0	1 0	1 1
Squills............ ,,	0 3	0 5	0 1½	0 3

GUMS.

	1875.		1874.	
	£ s.	£ s.	£ s.	£ s.
Ammoniaci drop .. per cwt.	2 10	5 15	3 10	6 0
lump.. ,,	1 6	2 5	3 0	4 10
Animi, fine washed ,,	11 0	12 0	12 0	13 0
bold scraped ,,	10 0	10 17/6	11 0	11 10
sorts ...... ,,	5 10	9 17/6	6 0	10 10
dark ...... ,,	4 10	5 10	5 0	6 0
Arabic, E.I., fine pale picked .. ,,	3 0	3 16	3 0	3 12
srts.,md.tofin. ,,	1 13	2 19	1 17	2 18
garblings .. ,,	0 19	1 15	1 2	1 10
Turkey, pick.gd.to fin. ,,	7 0	10 0	7 10	11 0
second & inf. ,,	3 0	6 18	4 0	7 5
in sorts .. ,,	1 10	2 15	2 5	3 15
Gedda .... ,,	1 1	1 4	1 0	1 12/6
Barbary, white .. ,,	1 10	1 15	1 6	2 3
brown .. ,,	1 5	1 10	1 5	1 16
Australian...... ,,	1 14	2 4	1 15	2 8
Assafœtida, cm.to fin ,,	0 12	1 18	1 7	2 16
Benjamin, 1st & 2nd ,,	20 0	28 0	12 0	27 0
Sumatra 1st & 2nd ,,	7 10	12 10	7 0	10 0
3rd	3 10	4 10	3 5	4 5
Copal, Angola red ,,	5 10	6 10	5 10	5 15
Benguela ,,	4 0	5 0	3 10	3 12/6
	s. d.	s. d.	s. d.	s. d.
Sierra Leone, per lb.	0 7¼	1 0	0 4½	0 10½
Manilla....per cwt.	20 0	34 0	9 0	19 0
Dammar, pale .... ,,	58 0	62 0	40 0	50 0
Singapore .... ,,	50 0	61 0	40 0	50 0
Euphorbium .... ,,	12 0	20 0	11 0	15 0
Galbanum .... per lb.	1 0	1 6	1 6	2 0
Gamboge, pckd.pipe per cwt.	195 0	260 0	180 0	280 0
Guaiacum ....per lb.	0 6	2 0	1 0	2 0
Kino..............per cwt.	50 0	90 0	50 0	90 0
Kowrie, rough .. ,,	40 0	50 0	23 0	34 0
scraped sorts ,,	51 0	70 0	34 0	50 0
Mastic, picked ....per lb.	4 0	5 0	4 6	6 0
Myrrh, gd. & fine per cwt.	120 0	240 0	119 0	280 0
ord. to fair.... ,,	75 0	119 0	80 0	115 0
Olibanum, p. drop ,,	57 0	63 0	62 0	68 0
amber & ylw. ,,	53 0	56 0	55 0	61 0
garblings.... ,,	23 6	32 0	23 0	39 0
Senegal .... ,,	2 0	2 5	2 15	3 3
Sandarac........ ,,	85 0	100 0	85 0	100 0
Shellac, Orange.. ,,	180 0	267 6	270 0	305 0
Liver .. ,,	160 0	200 0	250 0	265 0
Thus .... ,,	20 0	22 0	23 0	24 0
Tragacanth, leaf ,,	180 0	360 0	240 0	360 0
in sorts ,,	20 0	195 0	30 0	190 0

OILS.

	1875.		1874.	
	£ s.	£ s.	£ s.	£ s.
Seal, pale ....per tun	33 0	0 0	36 0	36 10
yellow to tinged ,,	31 0	32 0	32 0	35 10
brown ...... ,,	29 0	30 0	29 0	30 0
Sperm............ ,,	91 0	0 0	98 0	0 0
Cod .... ,,	41 10	42 0	39 10	0 0
Oils, *continued*:—				
Whale, South Sea, pale, per tun	35 0 to	0 0	29 0 to	0 0
yellow ,,	32 0	34 0	28 0	0 0
brown ,,	29 0	30 0	25 0	26 0
East India, Fish ,,	24 0	0 0	25 10	0 0
Olive, Galipoli ....per ton	0 0	0 0	47 0	0 0
Trieste...... ,,	43 10	44 0	46 0	0 0
Levant .... ,,	0 0	0 0	41 0	0 0
Mogador .... ,,	39 10	0 0	40 0	41 0
Spanish .... ,,	0 0	0 0	44 10	45 0
Sicily ...... ,,	0 0	0 0	43 10	0 0
Cocoanut, Cochin.. ,,	41 0	41 10	41 0	0 0
Ceylon ,,	36 10	36 15	34 15	35 0
Sydney ,,	30 0	36 0	29 0	35 10
Ground Nut and Gingelly:				
Bombay	0 0	0 0	0 0	0 0
Madras	34 0	0 0	35 10	36 0
Palm, fine...............	34 0	34 10	36 10	37 0
Linseed	24 2/6	24 5	27 15	28 0
Rapeseed, English, pale ..	32 10	32 15	30 15	0 0
brown	30 10	30 15	28 15	0 0
Foreign, pale ..	0 0	0 0	0 0	0 0
brown	0 0	0 0	0 0	0 0
Cottonseed	29 10	31 0	26 0	0 0
Lard	61 0	64 0	52 0	56 0
Tallow	23 10	45 0	20 0	30 0
Turpentine, American, cks.	22 3	0 0	25 6	0 0
French ,,	0 0	0 0	0 0	0 0
Petroleum, Crude	0 0	0 0	0 0	0 0
	s. d.	s. d.	s. d.	s. d.
refined, per gall.	0 8⅞	0 9⅛	0 9½	0 0
Spirit ,,	0 8	0 8½	0 9	0 0

SEEDS.

	1875.		1874.	
Canary............per qr.	150 0	170 0	88 0	90 0
Caraway, English per cwt.	44 0	45 0	0 0	0 0
German, &c....	0 0	0 0	0 0	0 0
Coriander	10 0	18 0	10 0	13 0
Hemp.............per qr.	36 0	38 0	40 0	42 0
Linseed, English per qr. ..	60 0	64 0	59 0	66 0
Black Sea & Azof	52 0	0 0	55 0	56 0
Calcutta ,,	55 3	0 0	58 0	0 0
Bombay ,,	51 6	51 9	59 0	0 0
St. Petrsbrg. ,,	0 0	0 0	54 0	55 0
Mustard, brown..per bshl.	0 0	0 0	10 0	15 0
white.. ,,	10 0	12 0	8 0	11 0
Poppy, East India, per qr.	47 0	0 0	57 0	0 0

SPICES.

	1875.		1874.	
Cassia Lignea ..per cwt.	55 0	75 0	56 0	65 0
Vera .... ,,	24 0	48 0	24 0	60 0
Buds .... ,,	107 6	110 0	112 6	117 6
Cinnamon, Ceylon:				
1st quality ......per lb.	2 6	4 2	2 4	4 0
2nd do. .... ,,	2 1	3 4	1 9	3 5
3rd do. .... ,,	1 7	2 10	1 3	3 0
Tellicherry ...... ,,	3 0	3 5	3 3	3 5
Cloves, Penang .... ,,	1 8	1 9	2 0	2 1
Amboyna .... ,,	1 5	1 6	1 4	1 4½
Zanzibar.......... ,,	1 4	1 5	1 4½	1 5
Ginger, Jam., fine per cwt.	82 0	160 0	110 0	200 0
Ord. to good .... ,,	52 0	80 0	66 0	100 0
African .... ,,	46 0	47 0	50 0	52 0
Bengal............ ,,	40 0	42 0	42 0	55 0
Malabar .... ,,	35 0	40 0	50 0	51 0
Cochin .... ,,	57 0	104 0	72 0	110 0
Pepper, Blk, Malabar, per lb.	0 5⅞	0 6½	0 7⅛	0 7¼
Singapore .... ,,	0 5¼	0 5½	0 7½	0 0
White Tellicherry ,,	0 11	1 5	1 4	1 10
Cayenne.......... ,,	3 0	3 7	1 6	2 2
Mace, 1st quality .. ,,	2 4	2 11	3 2	3 8
2nd and inferior .. ,,	1 3	2 3	2 0	3 1
Nutmegs, 78 to 60 to lb.	3 8	4 4	3 6	4 7
90 to 80 ,,	3 1	3 7	3 4	3 6
132 to 95 ,,	2 8	3 0	2 11	3 3
Pimenta	0 2½	0 3	0 3¼	0 3½

VARIOUS PRODUCTS.

	1875.		1874.	
COCHINEAL—				
Honduras, black ..per lb.	1 10	2 6	1 11	2 10
,, silver .. ,,	1 8	1 11	2 0	2 4
,, pasty .. ,,	1 7	0 0	1 9	1 11
Mexican, black.... ,,	1 9	1 11	1 10	2 1
,, silver.... ,,	1 7	1 8	1 8	1 9
Teneriffe, black .. ,,	1 9	3 2	2 0	3 8
,, silver .. ,,	1 9	1 11	1 11	2 2
SOAP, Castile......per cwt.	26 0	33 0	33 0	34 0
SPONGE, Turk.fin.pkd pr lb.	12 0	16 0	12 0	16 0
Fair to good ,,	4 0	11 0	4 0	11 0
Ordinary .. ,,	1 0	3 6	1 0	3 6
Bahama .... ,,	0 6	3 0	0 6	3 6
TERRA JAPONICA—				
Gambier ......per cwt.	28 3	0 0	26 0	26 3
Free cubes .... ,,	39 0	42 0	40 0	42 0
Cutch .... ,,	25 6	27 0	22 6	23 0
WOOD, Dye, Bar ..per ton	£4 10	£5 0	£5 0	0 0
Brazil, Branch .... ,,	18 0	27 0	20 0	26 0
,, Logs ...... ,,	9 0	16 0	9 0	18 0
Cam.............. ,,	20 0	36 0	22 0	30 0
Fustic, Cuba ...... ,,	9 10	9 15	9 0	9 10
Jamaica .... ,,	8 0	8 10	6 0	7 0
Logwood, Campeachy ,,	9 0	9 10	9 0	9 10
Honduras ...... ,,	7 10	8 0	6 10	6 15
St. Domingo .... ,,	6 5	6 15	5 2/6	5 10
Jamaica .... ,,	6 15	7 0	5 0	5 10
Lima, first pile .... ,,	11 0	12 0	12 10	14 0
Red Sanders .... ,,	6 10	7 0	6 10	6 15

NOTES AND QUERIES

CORRESPONDENTS will please observe that the Editor cannot undertake to send private replies to the class of queries which are answered in this page. He will be much obliged if readers will communicate items for this department as well as draw from it. All communications should give (in confidence) the name and address of the writer, though any *nom de plume* may be adopted. No query can be attended to in the current month which reaches this office after the 10th.

H. V.—All the articles named in your circular are liable to medicine stamp duty with the exception of the veterinary medicines, the vermin destroyer, the "whooping-cough mixture," and the "antibilious pills." The last two *may* also be rendered liable by the wording of your labels. Do you mean to say that you have been coolly selling all those mixtures, pills, and powders at 1*s.* 1½*d.* and 2*s.* 9*d.* each without stamps? No wonder the rest of us are so punished by the tax-gatherer.

You can register any bit of printed matter, labels, titles, handbills, &c., at Stationer's Hall, London, E.C., for 5*s.* 1*d.* You can register the same at this office for 2*s.* 6½*d.*; and, as far as we know, the one registration is every bit as valuable, legally, as the other.

The "Pharmaceutical Calendar" is published by the Pharmaceutical Society for a shilling, and contains all particulars relative to that association and its various departments.

Ambition.—A soaring chemist in the North of England, whose label lies before us as we write, describes himself thereon as "X. Y. Z., dispensing chemist and druggist (Senior Member of the British Pharmaceutical Conference, London)." With what awe the neighbours must gaze upon that distinguished gentleman.

P. F. C.—Gutta percha is bleached by dissolving it in 20 parts of boiling benzine, adding some fine plaster, and stirring occasionally for several days. The plaster settles, and draws with it all insoluble impurities. The clear liquor is then decanted, and introduced by small portions into a vessel containing twice its volume of alcohol at 90 per cent. The gutta percha is precipitated in the form of a white pasty mass, which is dried by exposure to the air for several weeks.

Baker.—The best bread in the world is that of Vienna. It is said to owe its superiority to the peculiar yeast employed, known as "Viennese yeast," which is also used, we may mention, for the production of "Wiener bier." It is prepared in the following way:—Three kinds of grain, viz., Indian corn, barley, and rye (all sprouting), are powdered and mixed, and then macerated in water at the temperature of 65 deg. to 75 deg. Cent. In a few hours saccharification takes place. The liquor is then racked off, allowed to clear, and alcoholic fermentation is set up by the help of a minute quantity of yeast. As fermentation progresses the globules of yeast reproduce themselves by a species of budding, engendering at first very small globules, but these rapidly increase in size, and attain a diameter of 10 to 12 millièmes. Carbonic acid is disengaged during the process with so much rapidity that globules of yeast are thrown up by the gas, and remain floating on the surface, where they form a thick scum. This scum is carefully removed, and constitutes the best and purest yeast. When drained and compressed by a hydraulic press, it can be kept from eight to fifteen days, according to the season.

J. H.—Registered chemists and druggists are not exempt from jury service unless they are "pharmaceutical chemists." Membership of the Pharmaceutical Society *per se* does not confer the privilege.

X. B.—For ringworm in horses (and we presume a similar treatment would suit cattle) Professor Williams, of Edinburgh, recommends, first, removal of the crusts by washing the parts with warm water, soft soap, and carbonate of potash, and afterwards the application of iodine ointment. A thorough cleansing and whitewashing of the stables should follow, and (in the cases of horses) the harness is to be washed with soap and water and brushed with a solution of iodine or corrosive sublimate, so as to prevent a recurrence of the disease.

K. F.—The "mistiness" to which you refer as occurring in bottles of pomade between the grease and the glass is occasioned by the bottles not being perfectly dry when the pomade is put in. A good plan is to wash the bottles previous to filling them with some ether, and afterwards set them in a warm place for a few minutes.

F. D. B.—Inf. Rosæ Conc., though often cloudy when first made, will generally clear if allowed to stand a few days before filtering. Or it may be fined at once by the addition of the white of an egg dissolved in a little water to 1 gallon of the concentrated infusion, followed by agitation.

Incog.—Having passed the "Minor" you are a "chemist and druggist" for life. The subscription to the Pharmaceutical Society is quite optional on your part, and in no way affects the registration. But you should be careful to advise the Registrar (17 Bloomsbury Square) of any change in your address, or you subject yourself to have your name struck off the register.

Ratee.—A powder for making ginger beer to be sold in single packets may be prepared thus:—

Ginger, bruised, ½ oz.
Cream of tartar, ¾ oz.
Ess. lemon, 4 gtt.

Mix. Some sugar may be added if it be thought desirable to make the packet look bigger. For use this powder is to be added to a gallon of boiling water, into which dissolve 1 lb. of lump sugar, and when the mixture is nearly cool two or three tablespoonfuls of yeast are to be added. The mixture should be set aside to work for four days, when it may be strained and bottled.

J. W.—No person commencing business later than July 31, 1868, was entitled to registration as a chemist and druggist. Assistants of three years standing were admitted to a modified examination if they established their claim before December 31, 1868.

F.—You cannot legally become the proprietor of a chemists' and druggist's shop, nor partner in such proprietorship, unless you are registered.

A. B. C.—The makers of aërated water machinery supply formulæ with their machines for all the usual beverages. "Soda water" is usually only plain water, with gas pumped into it. Lemonade is the same, with four or six drachms of syrup of lemons first put into the bottle. But we should strongly advise you if you are about to commence the business to get some practical man to show you the manipulation.

G. H.—We believe the most successful depilatories are made of arsenic and lime combined. The following formula is a good one:—

Orpiment, 1 oz.
Quicklime, 10 ozs.
Starch, 14 ozs.

To be made into a paste with warm water just before use. Redwood recommends a strong solution of sulphide of barium, made into a paste with powdered starch, as the best and safest depilatory. For lettering gold labels use copal varnish, coloured with plumbago or vermilion.

J. W. H.—We do not know of any *cheap* modern works on the subjects you name. Copland's "Dictionary of Practical Medicine," price 36*s.* (Longmans), is one of the best. Messrs. Longmans will shortly publish also a "Dictionary of Medicine," edited by Dr. Quain, but we do not know what the price will be. Professor Williams' works on "Veterinary Surgery" and "Veterinary Medicine" are the best treatises we know on that subject, but they are also expensive. Messrs. Maclachlan & Stewart, Edinburgh, are the publishers. Longmans publish a useful little work called Blain's "Veterinary Art," at about 6*s.* or 7*s.*, but it is not recent.

W. F.—The English dental periodicals are the *British Journal of Dental Science*, published by Churchill, 1*s.* per month, and the *Monthly Review of Dental Surgery*, published by Smith, Elder & Co., also 1*s.* per month. The *Chemical News*, 4*d.* a week, and the *Journal of the Chemical Society*, 2*s.* a month, are the strictly scientific chemical journals.

B. O. W. L.—The action of sulphuric acid on potassium ferro-cyanide is twofold, depending on its state of dilution.

When largely diluted with water, hydrocyanic acid is produced. Thus: Let x represent an indefinitely large quantity of water—

$$2K_4FeCy_6+6H_2SO_4+xH_2O=$$
$$6HCy+6KHSO_4+K_2Fe_2Cy_6+xH_2O.$$

But *tolerably* strong sulphuric acid decomposes potassium ferrocyanide entirely and forms ferrous, potassium and ammonium sulphates, carbonic oxide (carbon monoxide) being evolved. Thus:

$$K_4FeCy_6+6H_2SO_4+6H_2O=$$
$$2K_2SO_4+FeSO_4+3(NH_4)_2SO_4+6CO.$$

Or, the first part of the equation may be expressed—

$$K_4FeC_6N_6.3H_2O+6H_2SO_4+3H_2O.$$

The ferro-cyanogen in ferro-cyanide of potassium is decomposed when the salt is heated with sulphuric acid, carbonic oxide being evolved when the acid is strong, and hydrocyanic acid if weak. Great care must be taken in producing the latter, first that the distillation should be slow, and that the sulphuric acid should be sufficiently dilute.

In Fownes's "Chemistry" the theory of the change is shewn. The important effect of the presence of water in considerable quantity, as influencing chemical action, is illustrated in other well-known processes.

W. F.—The Greek motto you sent for translation means "the whole is greater than a part." Tomes' "Manual of Dental Surgery" is perhaps the best treatise on the subject. It is published by Churchill. A smaller work by Dr. John Smith, published by the same firm, "Handbook of Dental Anatomy," would give you much of the information you require.